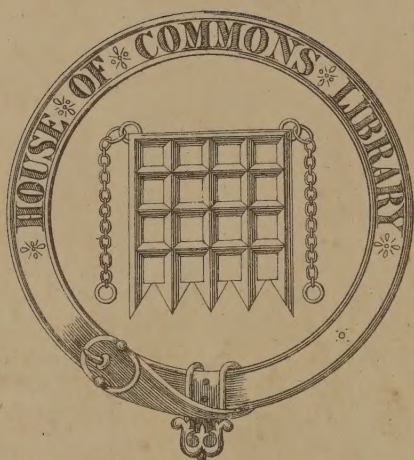
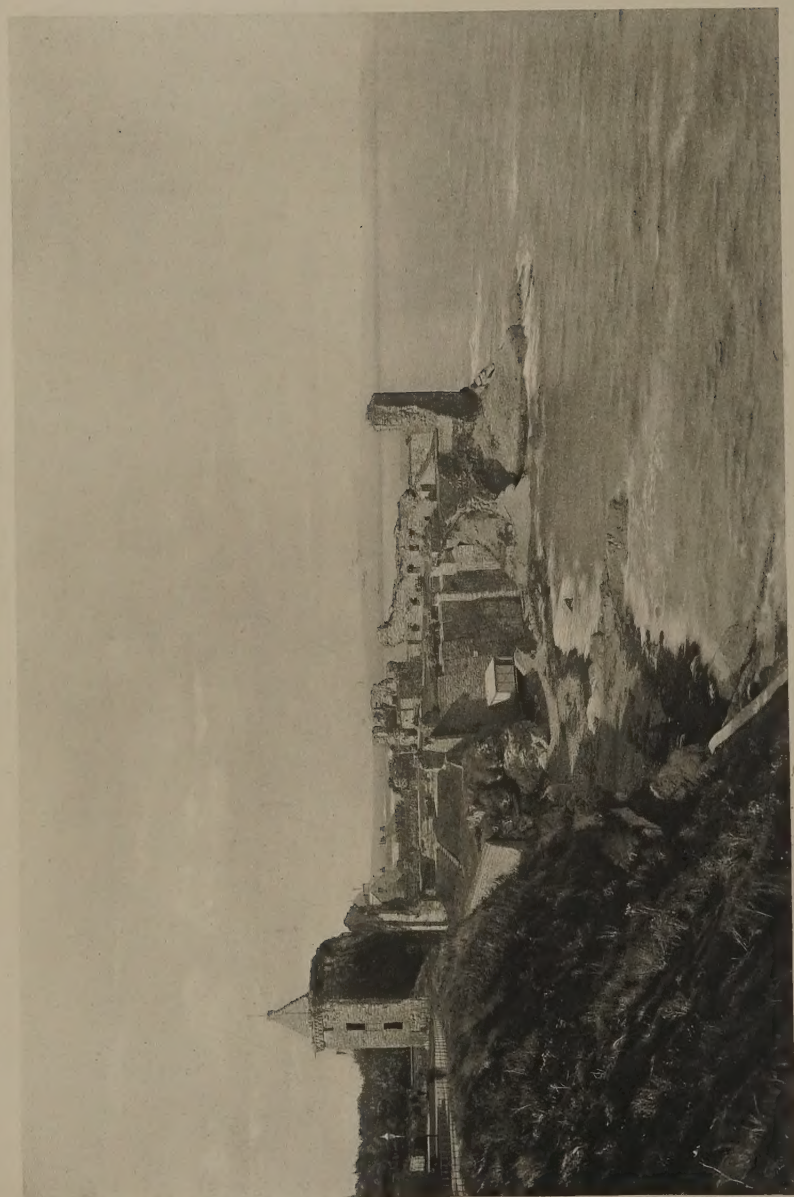






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ORDNANCE GAZETTEER



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ORDNANCE GAZETTEER OF SCOTLAND:

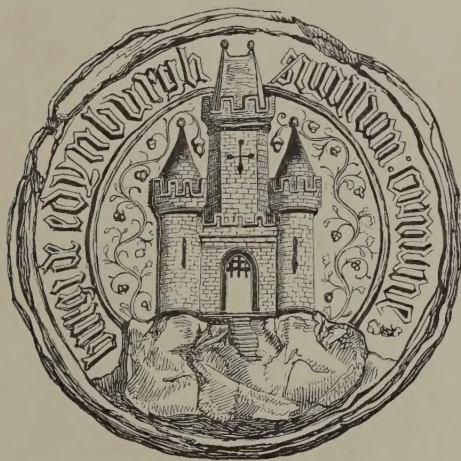
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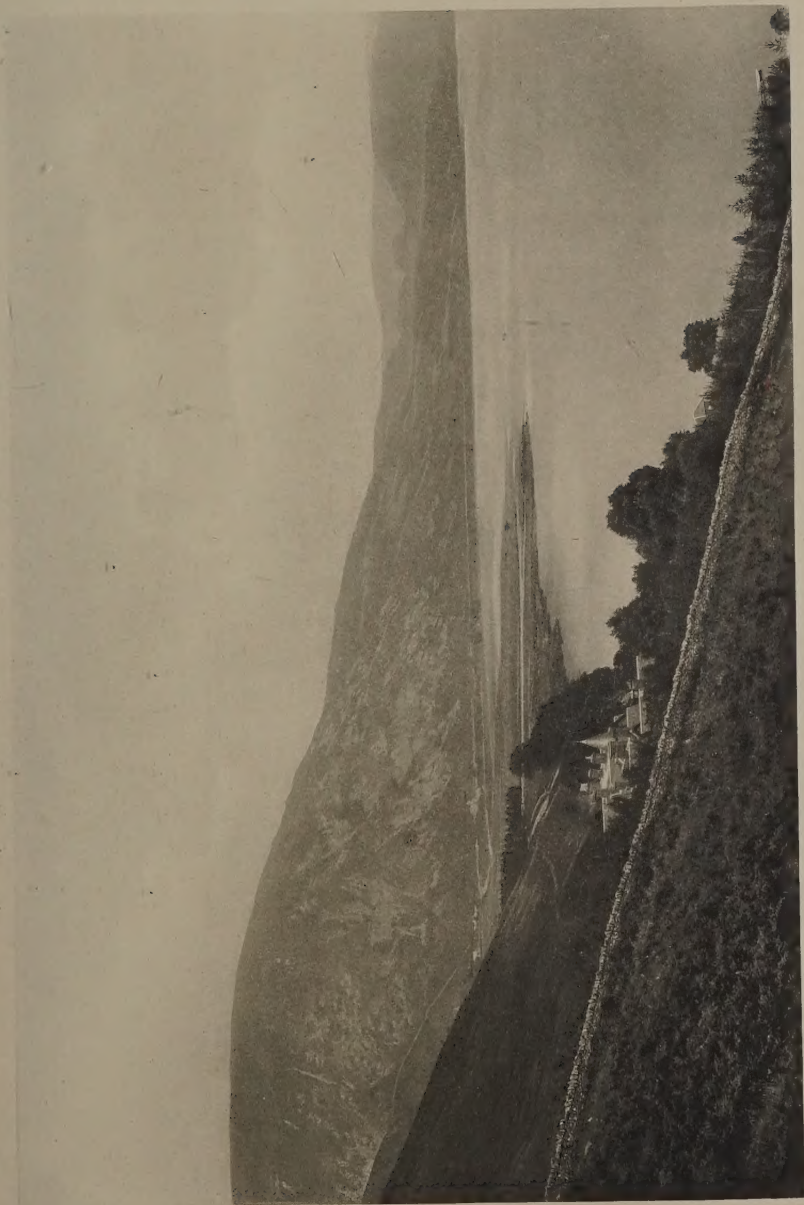


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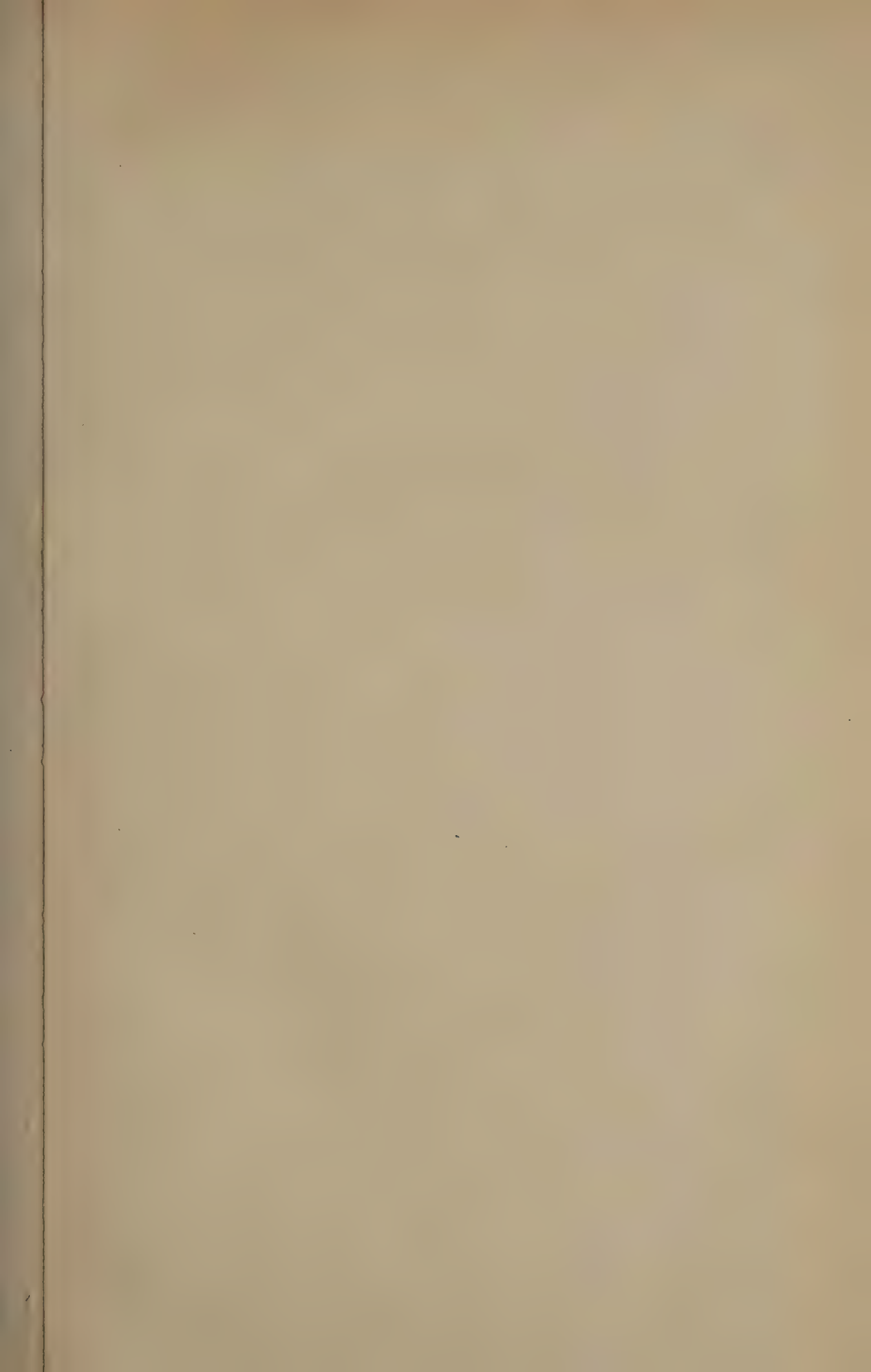
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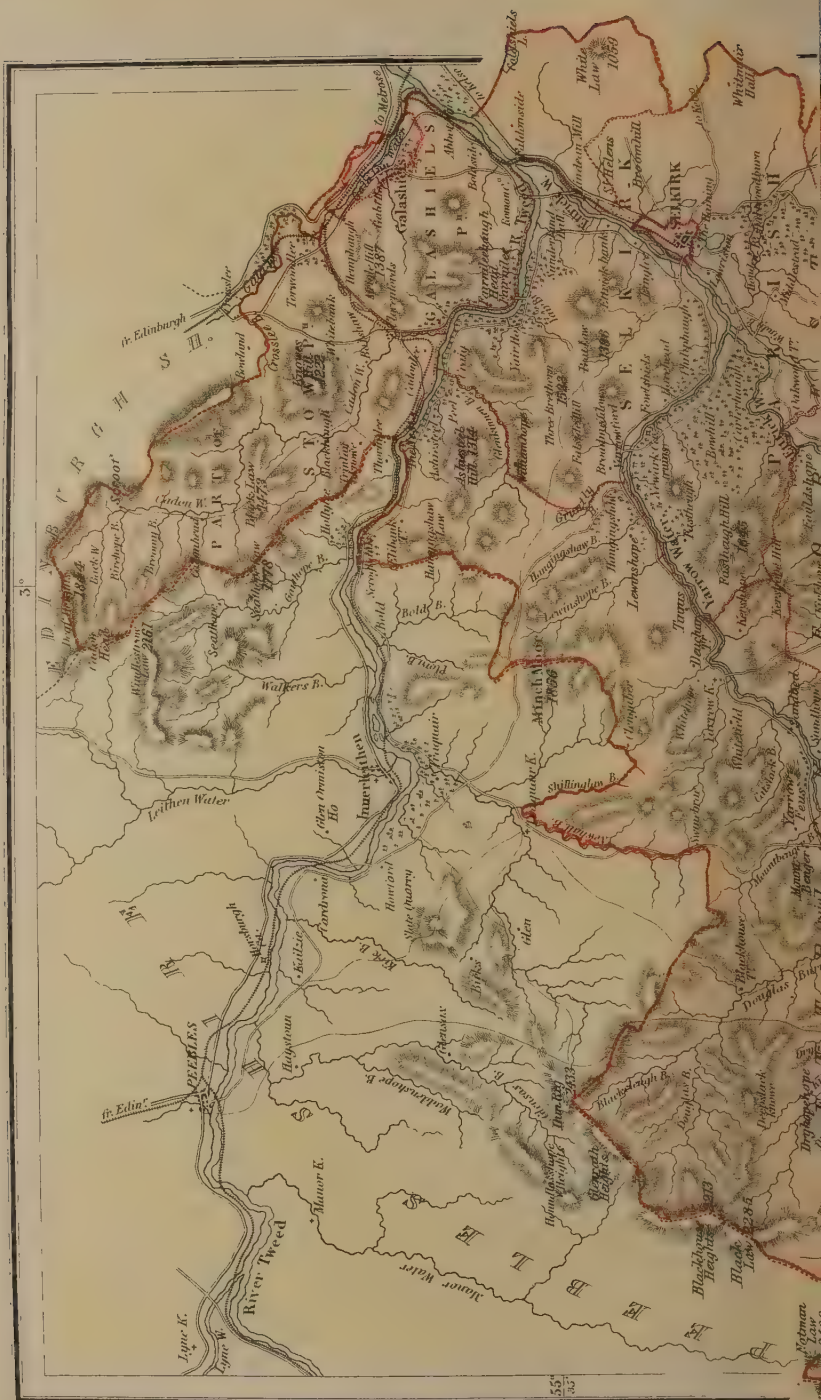


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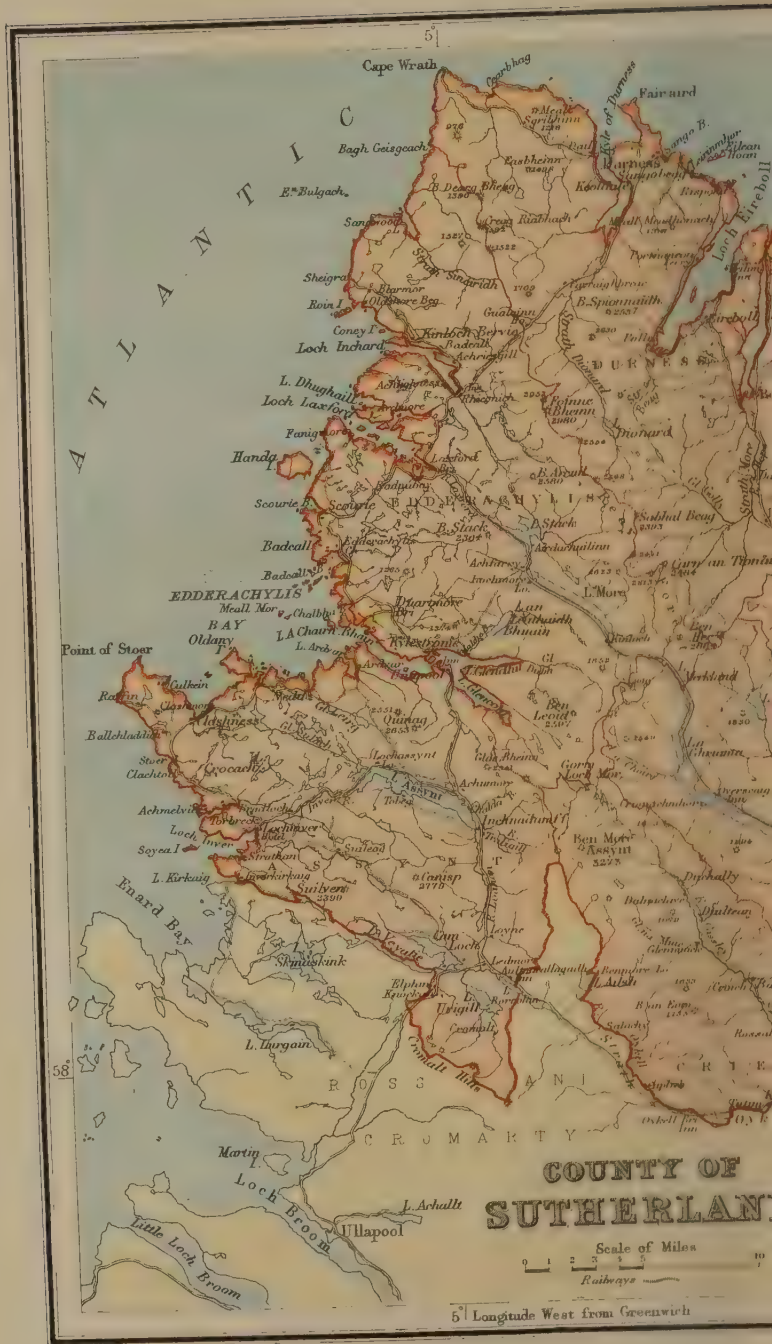
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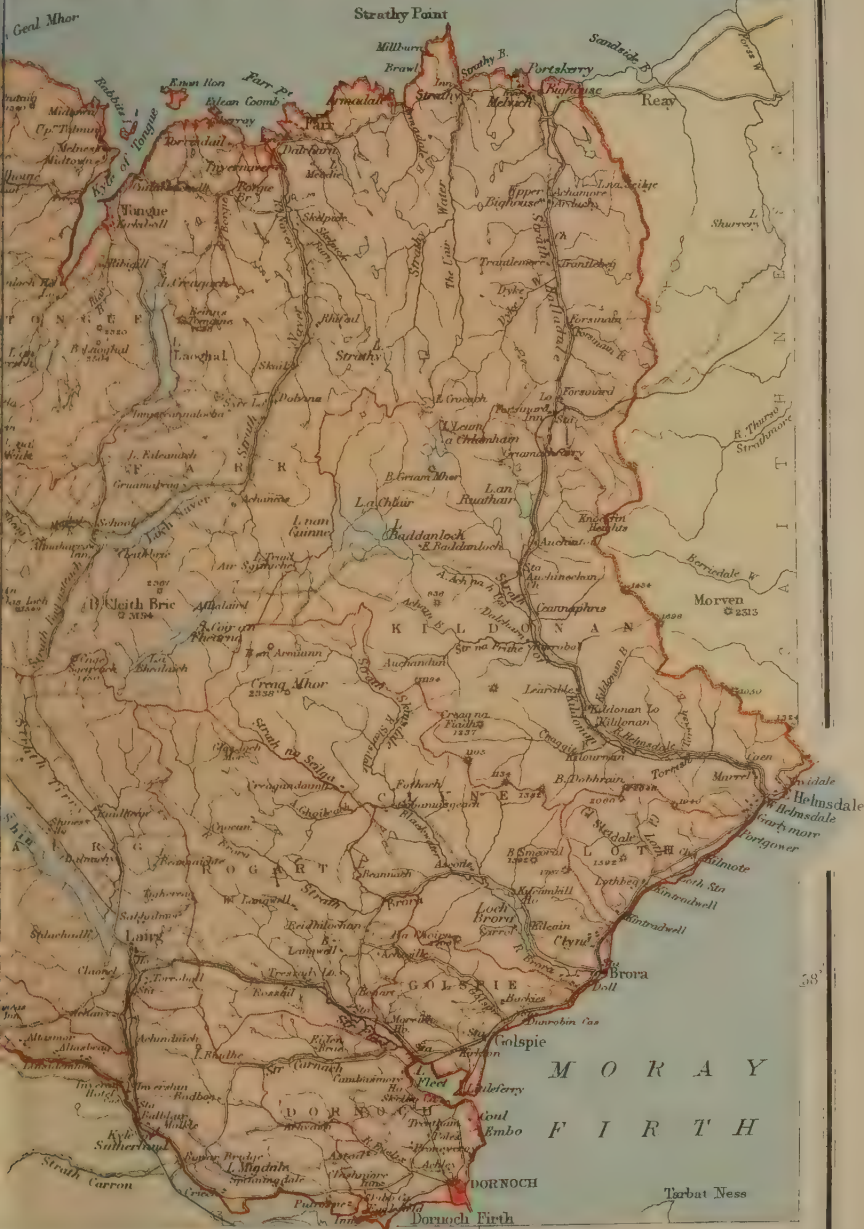


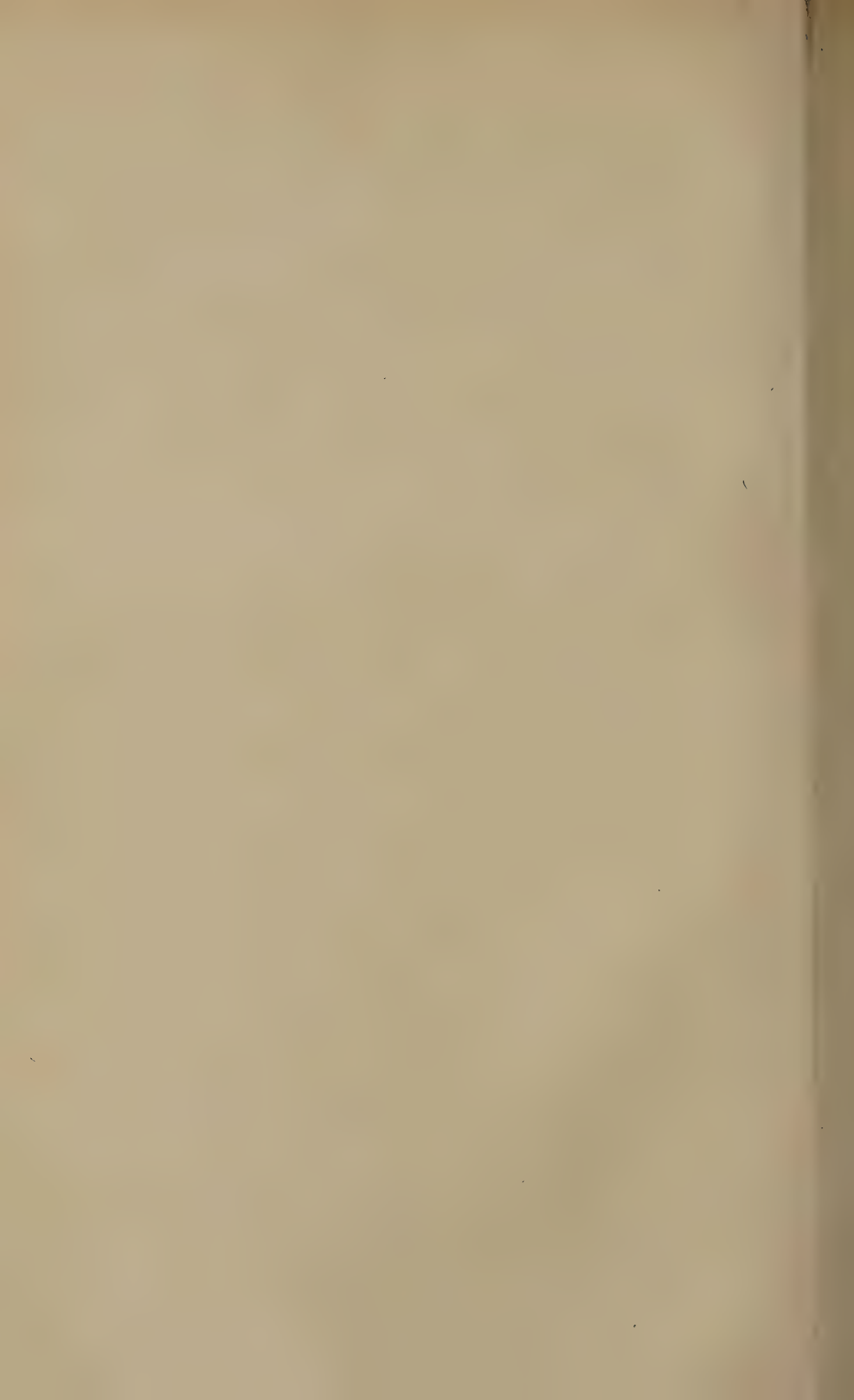
COUNTY OF
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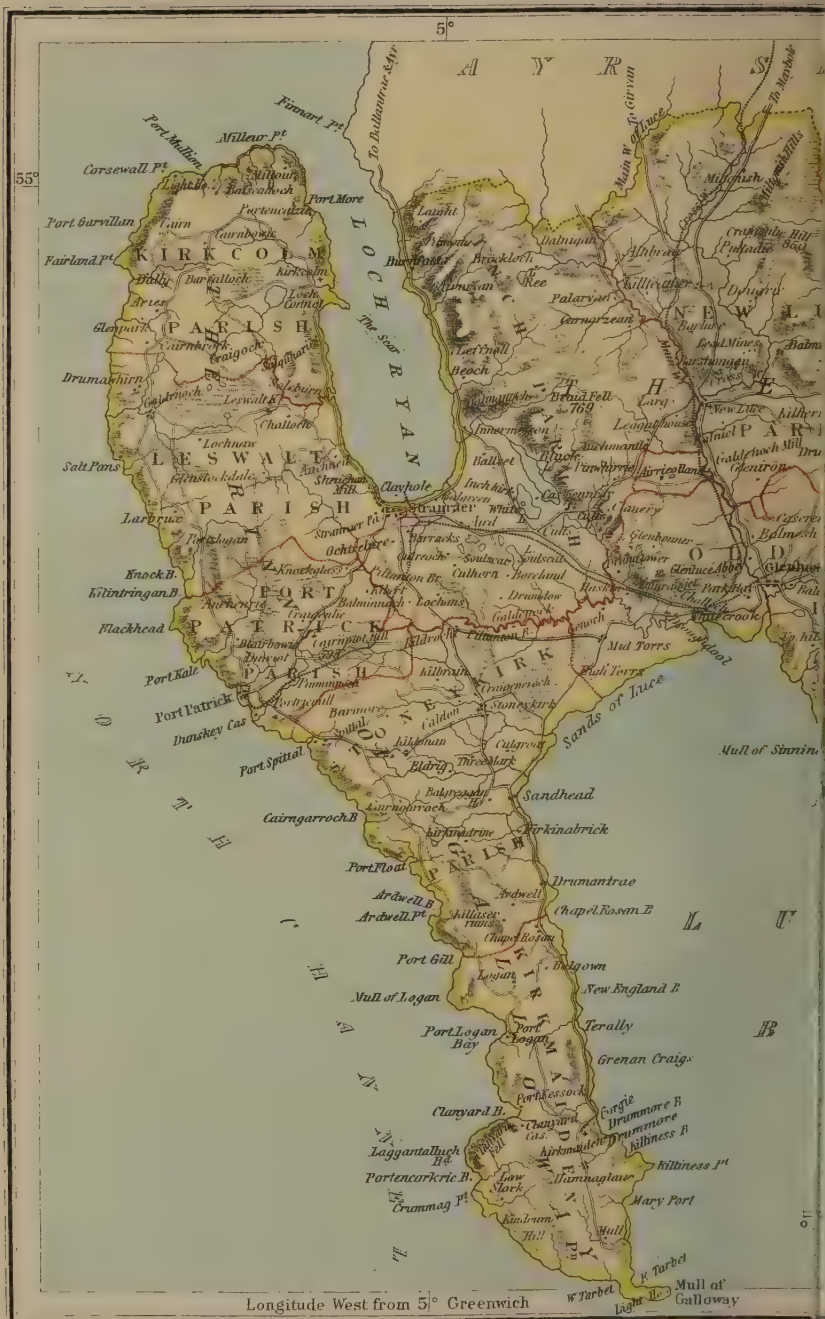
Scale of Miles
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Railways

5° Longitude West from Greenwich

O C E A N

MORAY
FIRTH





Longitude West from 5° Greenwich

COUNTY OF WIGTOWN.

55°



Scale of Miles.

Railways thus

Burrow Head

S

SADDELL AND SKIPNESS, a parish on the E side of Kintyre peninsula, Argyllshire, formed from the parishes of Killelan and Kilcalmonell in 1753. It contains the village of **CARRADALE**, 13 miles N by E of Campbeltown and 22 S by E of Tarbert, with a post office, having money order, savings bank, and telegraph departments, and a hotel; other villages being Saddell, 4 miles S by W, and SKIPNESS, 15½ N by E, of Carradale. It is bounded NE by the lower waters of Loch Fyne, E by Kilbrannan Sound, SW by Campbeltown, W by Killelan and Kilcalmonell, and NW by Kilcalmonell. Its utmost length, from NNE to SSW, is 24½ miles; its breadth varies between 1½ and 5 miles, whilst tapering northward and southward to a point; and its area is 74½ square miles or 47,663½ acres, of which 300½ are water, 480½ foreshore, and 10½ tidal water. The coast, extending 6½ miles south-eastward and southward along Loch Fyne to Skipness Point, and thence 24½ miles south-westward along Kilbrannan Sound, is indented by only one good-sized inlet, Carradale Bay; projects but one considerable headland, Carradale Point (133 feet high); and mostly rises steeply from the sea to a height of over 100 feet. Of seventeen streams that run to Kilbrannan Sound much the largest is Carradale Water, others being Skipness, Claonsaig, and Saddell Waters; whilst of fifteen small fresh-water lakes the chief are Lochs Romain (4 × 1 furl.; 542 feet) and Tana (2½ × 1 furl.; 605 feet). The surface is hilly everywhere, in places mountainous, the principal summits from N to S being Cruach Doire Leithe (1236 feet), Coire nan Capull (1095), Fuar Larach (886), Creag Mhor (741), Cnoc an Samhlaidh (866), Deucharan Hill (1081), Cnoc nan Gabhar (753), Beinn Bhreac (1398), Meall Donn (1138), BEN AN TUIC (1491), Cnocmalaich (853), and Bòrd Mor (1338). Of these, Ben an Tuic commands a magnificent view of seven Scottish and two Irish counties, from Corsill Point in Wigtownshire to Ben More in Mull and Ben Lomond in Stirlingshire. The hills are neither steep, barren, nor rocky, but generally covered with an intermixture of grass and heath; and, rising regularly and with easy ascent from the shore, they have flat summits, or stretch away into small tablelands. The glens, all running from NW to SE, usually open, at their lower ends, upon beautiful little bays; and they enjoy so great a degree of heat, and such happy visitations of fertilising showers, as are highly favourable to agriculture. A stranger traversing the parish lengthwise along the road is presented with a great variety of land and sea views, and alternately moves along a delightful bank overlooking the sea and Buteshire, and suddenly descends into pleasant woods and valleys. Mica slate, intersected with quartzite and basaltic veins, is the predominant rock; and granite occurs in large boulders. The soil in the bottom of the glens is a fine alluvium; that of the higher arable lands is light and sandy. At Saddell village, near the right bank of Saddell Water, stand the tree-embowered ruins of Saddell Abbey. Its cruciform minster measured 186 by 24 feet, or 78 across the transept; and the cloister-garth to the S was 58 feet square; but little remains save portions of the choir wall and the N transept. In the churchyard are some most interesting sculptured effigies, and hard by is a holy well. The abbey of 'Saghadul' or Saddell was founded for Cistercian monks by Ragnall or Reginald, the second son of Somerled, who himself is styled King of the Isles and Argyll, and who died in 1207. It made peace with Haco of Norway in 1263, and in 1507 was, with all its possessions, annexed by James IV. to the bishopric of Argyll. Saddell Castle, 3 furlongs SSE, at the head of Saddell Bay, is a large square battlemented tower. Hither Ragnall's great-grandson, Angus Og, is said to have welcomed Robert Bruce in 1306, after the defeats of Methven and Dalry. Other antiquities, besides those

noticed under Carradale and Skipness, are several cairns, tumuli, and hill-forts. Opposite Saddell Castle stands Saddell or Glensaddell House, the seat of John Neil Macleod, Esq. of Kintarbert. Other mansions, noticed separately, are Carradale House, Cour, Skipness Castle, and Torrisdale Castle. In the presbytery of Kintyre and the synod of Argyll, this parish since 1871 has been ecclesiastically divided into Saddell and Skipness, the former a living worth £155. Saddell parish church, at Carradale village, was built about 1771, and contains over 300 sittings. There is a Free church of Carradale and Skipness; and four public schools—Carradale, Saddell, Skipness, and Spersaig—with respective accommodation for 153, 54, 54, and 30 children, had (1893) an average attendance of 123, 37, 23, and 16, and grants of £138, 16s. 6d., £51, 16s. 6d., £43, 15s. 6d., and £25, 10s. 6d. Pop. (1801) 1767, (1831) 2152, (1861) 1227, (1871) 1153, (1881) 1163, (1891) 1156, of whom 698 were Gaelic-speaking, and 761 were in Saddell ecclesiastical parish.—*Ord. Sur.*, shs. 20, 21, 29, 12, 1870-76.

Saddle Yoke. See **MOFFAT**.

St Abb's Head. See **ABB'S HEAD, ST.**

St Andrews, a parish containing a royal burgh of the same name on the E coast of the county of Fife, between the entrance to the Firth of Tay and Fife Ness. When the parish of St Leonards, which had previously consisted of four separate parts, was re-formed by the Boundary Commissioners in 1891, there was some exchange of territory between it and St Andrews parish. St Leonards is now situated wholly within the burgh of St Andrews. The parish of St Andrews is bounded N by the parish of Leuchars, NE by St Andrews Bay, SE by the parish of Kingsbarns, S by the parishes of Dunino, Cameron, and Ceres, W by the parish of Kemback, and NW by the parish of Leuchars. On the N and NW the boundary is formed by the river Eden from the mouth to Nydie Mill, a distance of 6½ miles; on the SSE it follows Kenly Burn for about 3 miles, though there are divergences; elsewhere, except on the sea-coast and for a mile near Wester Balrymonth along a small stream flowing to Kinness Burn, the line is almost entirely artificial. The extreme length of the parish, from Nydie Mill on the W east-south-eastward to the mouth of Kenly Burn, is 9½ miles; the average breadth at right angles to this is about 2½ miles. The coast, from the Eden to the burgh of St Andrews, is a flat, firm, sandy beach, skirted by the links; and from the burgh to Kenly Burn an expanse of rough shelving rocks skirted by low cliffs from 30 to 40 feet in height. Among these are several caves, but Kinkell Cave, a mile to the E of the burgh, with a length of about 75 feet and a height of from 10 to 25 feet, is the only one of importance. The Maiden Rock to the N of the burgh, the Rock and Spindle to the E of Kinkell Ness, and Buddo Rock near Boarhills, also present curious features, especially the Rock and Spindle, which shows a peculiar radial arrangement of basaltic columns. The surface is generally flat along the seaboard, and rises from this slowly towards the interior boundary, heights of 360, 375, and 537 feet being reached at East Balrymonth Hill, West Balrymonth Hill, and Clatto Hill respectively. The soil is fertile, and is mostly under tillage, the woodland being generally confined to the policies of the mansions. The underlying rocks are carboniferous, consisting of beds of sandstone, with thin seams of coal, clay, and clay-ironstone. Many of the beds are fossiliferous, and there are also volcanic rocks. Basalt for road metal and paving-sets is quarried in several places, and sandstone of excellent quality for building is worked at Knock Hill and Strathkinness. The drainage is carried off by the river Eden and Kenly Burn on the borders, and in the centre by Kinness Burn, which enters the sea to the E of St Andrews, one branch rising on the W at Knock Hill, and another

on the S border at Priory Bank. At the mouth of the Eden—up which the tide flows for 4 miles—there is a shallow sandy bay abounding in flat fish and shells, and along the lower part of the river salmon and sea-trout may be caught. Magnus Muir, on the SW, where Archbishop Sharpe was assassinated, is separately noticed. The south-eastern part of the parish is traversed by the great coast road along the Firth of Forth and by the East Neuk of Fife to St Andrews and thence to Dundee, and by the road from St Andrews westward to Cupar-Fife, as well as by a large number of good district roads. The St Andrews branch of the North British railway system enters the parish at the river Eden at Guard Bridge, and runs east-south-eastward $3\frac{1}{2}$ miles to the W end of the town of St Andrews. It was opened in 1852, and the Anstruther and St Andrews section of the same system was opened to Boarhills in 1883, and to St Andrews in 1887. The proposed East Fife Central railway, from Leven to Bonnyton and northward to Dairsie, is to have an eastern branch from Bonnyton to Stravithie on the Anstruther and St Andrews railway. Besides the town of St Andrews the parish contains also the villages of Strathkinness (W) and Boarhills (E) and the hamlet of Kincapple (N), with part of the hamlet of Denhead (S), the last three of which are separately noticed, as is also the old bridge at Guard Bridge. The mansions are Balmungo, Clatto, Denbrae, Kincapple, Kingask, Broomhills, Kenly Green, and Strathtyrum, the first five of which are separately noticed, as is also Mount Melville, part of the policies of which are in this parish, though the mansion-house is in the parish of Cameron. The parish is in the presbytery of St Andrews and synod of Fife, and the charge is collegiate, the living of the first minister being over £600 a year, and that of the second £198. It gives off the *quoad sacra* parish of Strathkinness, and there is a mission station at Boarhills. The churches are noticed in the following article, and there is also a Free church at Strathkinness. Under the landward school board of the parish of St Andrews, the Boarhills and Strathkinness schools, with accommodation for 117 and 208 pupils respectively, had in 1893 attendances of 62 and 138, and grants of £64, 0s. 6d. and £118, 13s. Landward valuation (1885) £23,752, (1893) £21,492, 19s. 8d. Pop. (1801) 4203, (1831) 5621, (1861) 7092, (1871) 7851, (1881) 7835, (1891) 7538, of whom 3818 were males and 4220 females, while 5636 were in the town and 888 were in the *quoad sacra* parish of Strathkinness.

The Bay of St Andrews, which may be taken as bounded on the N by the Red Head, and on the S by Fife Ness, measures 24 miles along the line between these points, and 10 miles along a line at right angles to this westward to the head of the bay. It is dangerous and stormy; and vessels driven in by easterly winds are compelled to run for the entrance to the Tay, with its dangerous and intricate sandbanks.

The Established Church has a presbytery of St Andrews, which is in the synod of Fife, and comprehends the parishes of St Andrews, Abercrombie, Anstruther-Easter, Anstruther-West, Cameron, Carnbee, Crail, Dunino, Elie, Ferry Port on Craig, Forgan, Kemback, Kilconquhar, Kilrenny, Kingsbarns, Largo, Leuchars, Newburn, Pittenweem, and St Leonards, and the *quoad sacra* parishes of Cellardyke, Largoward, Newport, and Strathkinness. The Free Church has also a presbytery of St Andrews, with congregations at Aberdour, Aberfoyle, Acharn, Anstruther, Carnbee, Crail, Elie, Ferry Port on Craig, Largo, Leuchars, Newport (Forgan), St Andrews, St Monance, and Strathkinness. The Episcopal Church has a united diocese of St Andrews, Dunkeld, and Dunblane, with churches at Alyth, Auchterarder, Blairgowrie, Bridge of Allan, Burtisland, Callander, Comrie, Coupar-Angus, Criannlarich, Crief (2), Culross, Cupar-Fife, Dollar, Doune, Dunblane, Dunfermline (2), Dunkeld, Dunning, Fernar, Forfar, Glamis, Glenalmond, Killin, Kilmaeonaig, Kincairdine-on-Forth, Kinghorn, Kinloch-Rannoch, Kinross, Kirkcaldy, Kirriemuir, Leven, Lochearnhead, Meigle, Muthill, Newport, Perth (2), Pitlochrie,

Pittenweem, St Andrews, Straththay, Taymouth, Tunnell Bridge, and Weem; and the Roman Catholic Church has an archbishopric of St Andrews and Edinburgh, with churches in Edinburgh (6), Balfour, Bathgate, Borrowstouness, Broxburn, Dalkeith, Davidson's Mains, Denny, Dunbar, Dunfermline, Falkirk, Fauldhouse, Galashiels, Haddington, Hawick, Innerleithen, Jedburgh, Kelso, Kilsyth, Kirkcaldy, Leith, Lennoxton, Linnithgow, Loanhead, Lochgelly, Musselburgh, North Berwick, Oakley, Pathhead, Peebles, Penicuik, Portobello, Ratho, Rosewell, St Andrews, Selkirk, Slamannan, South Queensferry, Stirling, Strathblane, Tranent, and West Calder.

St Andrews, a royal burgh, market, and university town, and a seaport on St Andrews Bay, near the middle of the sea-coast of the parish just described. It was long the ecclesiastical metropolis of Scotland, and is still the seat of a presbytery. The station, on a branch line of the North British system leaving the main line at Leuchars, is by rail 12 miles E of Cupar, $12\frac{3}{4}$ SE of Dundee by the Tay Bridge, and $55\frac{1}{2}$ NE of Edinburgh by the Forth Bridge. By the Anstruther and St Andrews railway, opened in 1887, the town is also connected with the Leven and East of Fife section of the North British system. The country round is low and flat, and the environs are somewhat tame, though from various points of view, particularly from the W and N, the town itself, with its spires and venerable towers and ruined buildings, looks well. The site of the town is a tabular rocky eminence, some 50 feet above sea-level, and about 1 mile long and $\frac{3}{4}$ broad, falling to the sea on the E and N by steep rocky declivities, and dipping on the landward side into a narrow vale traversed by the Kinness Burn. The situation is somewhat exposed, but the climate is healthy and bracing.

Lines of Street, etc.—The cathedral, a short distance W of the harbour, marks the point from which the town grew, and so we find that the three principal streets run westward from this point, diverging somewhat from one another in their course. The chief of the three is South Street, which is the one farthest S; in the centre is Market Street, and farther N is North Street. The first and last are wide airy streets, measuring 70 feet from side to side, and all are well built and well paved. South Street is lined on both sides with lime-trees, and terminates westwards in a fine arched gateway, being the old city gate. Market Street is broad and spacious in the middle and W end, but the E end is still narrow. They are intersected by a number of cross streets from N to S. From the E end of South Street, Pends Lane passes eastward, farther W are Castle Street (N) and Abbey Street (S)—the latter being continued westward by Abbey Walk, Union Street and College Street (both between Market Street and North Street), Church Street (a continuation of College Street to South Street), North Bell Street and South Bell Street (from North Street to South Street), and at the extreme W are Golf Place, Hope Street, City Road, and Bridge Street. Between North Street and the shore there is another thoroughfare called at one time Swallow Street, the line of which is now occupied by the walk called The Scores. Southward from the centre of South Street is Queen Street, and on the NW of the town is a winding path, called Lead Braes Walk. The railway station is at the E end of North Street. The extreme length of the town is about a mile—counting from the harbour westward, and the greatest width at the W end is under half a mile. A rough map of the town, made in 1530, shows that since that time no change has taken place in the plan of the main streets. The most of the older houses seem to have been of wood. Subsequent to the Reformation these were replaced by more substantial structures, many of them built with stones taken from the castle, the cathedral, or some of the other ecclesiastical buildings that had been wrecked at the time. The Reformation, however, ruined the prosperity of the town, and the rough and inconvenient state of the streets that had obtained in the end of the 16th

century, was but little improved till well into the 19th century. Prior to 1840 'there was not a foot of side pavement in any of the streets; filth and squalor abounded unchecked; cows and pigs grazed in front of the colleges; the venerable ruins were fast going, by neglect, to decay, and were littered with rubbish; the lines of the public streets were continually broken by awkward abutments of ungainly houses; there were few visitors of any distinction, even to the splendid links, which lay with all their vast capabilities almost untrodden; and generally St Andrews, considering the prestige of its antiquity as an ecclesiastical capital and its rank as a seat of learning, was at the lowest pitch of miserable neglect and decay.' The St Andrews of to-day, with its wide well-paved streets, handsome public buildings and houses, and its gay season of summer visitors, had still to be created; but in 1842 the hour came, and the man, in the person of Major H. L. Playfair (1786-1861), son of Principal Playfair (1799-1819) of the United College. Major (afterwards Sir Hugh) Playfair quitted the service of the Honourable East India Company—in which he held high command in the artillery—in 1834, and retired to St Andrews, where he spent the rest of his life. He was elected provost in 1842, and at once set to work on the new reformation on which his heart was set, and during his provostship revolutionized the town. The old streets were widened, levelled, causewayed, and provided with side paths, a new quay built, barriers erected to prevent the encroachments of the sea on the links—one achievement being the completion of the Dane's Work on the NE, an unfinished bulwark of rough stones, commenced by one of the priors in 1507, and afterwards abandoned—the formation of The Scores and other walks, the erection of new university and municipal buildings, and of a club-house at the links. The town had a number of ports or gates, but seems never to have had a regular wall, the fences at the backs of the houses being probably deemed sufficient. One of the gates was at the N end of Castle Street, another at the Harbour Hill, a third at the W end of Market Street, one at the shore on the road to Crail, and one still remains at the W end of South Street.

History.—Like so many of the older Scottish burghs, St Andrews owes its origin and early importance to its connection with the Church. About the 7th century the whole district seems to have been a wild expanse of moorland and forest, forming a hunting-ground for the Pictish kings, and known as Muckross, from the Celtic *muic*, 'a pig or boar,' and *ross*, 'a promontory.' In the grant of this tract to the Bishop by Alexander I., the name appears as *Cursus Apri*, or boar chase, and the village of Boarhills seems still to keep up the remembrance of the old title, as do also the city arms, the shield bearing a boar tied to a tree. Hector Boece says it was 'so called from a boar of wondrous size, which, after having made prodigious havoc among men and cattle, and having often been unsuccessfully attacked by the huntsmen at the imminent danger of their lives, was at last set upon by the whole of the inhabitants of the district, and killed while endeavouring to make his escape across this tract of ground.' The historian further adds that in his time manifest proofs of the existence of this huge beast were extant in the shape of two tusks, each 16 inches long and 4 thick, which were preserved in the cathedral. Tradition claims for the first religious house at St Andrews, the date of 847 A.D. The full account, as ultimately elaborated, is, that when in 845 Constantine the Great invaded Pictavia with a large army in order to avenge the martyrdom of St Andrew, an angel appeared to Regulus the bishop and ordered him to remove and hide some of the relics of the saint. In obedience to this command Regulus concealed three fingers of the saint's right hand, a part of one of his arms, the pan of one of his knees, and one of his teeth; and after Constantine had carried off the rest of the remains to Constantinople, the bishop, again visited by the angel in a dream, was enjoined to sail northwards with his relics, and to found and dedicate a church

to St Andrew wherever his ship should be wrecked. Meanwhile the saint himself had appeared in a vision to Hungus, son of Fergus, king of the Picts, who was at the time at war with Athelstan, king of the Saxons, with whom he was about to fight an important battle, and after promising him the victory, warned him also as to the approach of the relics and the honour and fame which would gather round the place where they were landed. The Picts vowed to revere St Andrew for ever if they should gain the victory, and as their cause was successful and Athelstan was killed, they were quite prepared to extend a warm welcome to Regulus, who, after sailing about for a year and a half, was at last wrecked in St Andrews Bay somewhere near the present harbour. Regulus, weary with his long voyage, rested for seven days, and then leaving part of his company at the place where he had landed, he set out with the relics for Forteviot, where he was kindly received by Hungus' three sons, 'who, being anxious as to the life of their father, then on an expedition in the region of Argathelia, gave a tenth part of Forteviot to God and St Andrew.' The king returned safe, and further grants of land were made to the clerics, Hungus himself going with them to Muckross or Kilmymont, where they had been wrecked, and 'making a circuit round a great part of that place immolated it to God and St Andrew for the erection of churches and oratories, . . . with waters, meadows, fields, pastures, moors, and woods as a gift for ever, and granted the place with such liberty that its inhabitants should be free and for ever relieved from the burden of hosting and building castles and bridges, and all secular exactions.' Such is the completed legend, the older forms of which make, however, no mention of Regulus at all; in a subsequent form he is introduced as a monk and abbot; and in the latest form he is a bishop. Dr Skene, who has compared and analysed all the stories, is of opinion that the early part of the legend belongs entirely to the relics, and was tacked on to the latter part of the story in order to give the dedication to St Andrew a fictitious date, so that the foundation might seem to have a greater antiquity than that of Iona. The Hungus or Angus, son of Fergus, referred to, seems to be the Angus who ruled over the Picts from 731 to 761, and the adoption of St Andrew as the national saint must lie somewhere between those dates. It must have been subsequent to 731, for when Bede finished his *Ecclesiastical History*, in that year the national saint was St Peter, to whom Nectan had dedicated the land of the Picts in 710, and it must have been prior to 747, for in that year *Tighernac* records the death of Tuathalan, abbot of Kilmymont. Under the date of 736 the same annalist records that Angus devastated Dalriada, so that the latter year is probably that of the foundation of the see and of the mediæval prosperity and importance of the town. The dedication to St Andrew and the great veneration in which he was thereafter held seems to have been borrowed from the Saxons of Northumbria, where Wilfred, Bishop of York, who was the leader of the Roman party in the Northumbrian Church, had erected a church dedicated to this saint, at Hexham, in 674; and there is a vague tradition that Aoca, Bishop of Hexham, who was driven from his Northumbrian bishopric in 732, founded a see among the Picts. Whether St Regulus or St Rule is to be connected with the earlier or later portion of the legend is doubtful, and in all probability there is a confusion of two different persons, viz., St Regulus the first Bishop of Senlis in Gaul, and St Riaguil of Muicinis in Ireland; for while the ordinary day assigned in Scotland for the commemoration of St Rule is the 17th October, the day of the Irish saint is the 16th, and the Aberdeen Breviary has a St Rule commemorated on the 30th March. It is also highly probable that the mystification may be intentional so as to take in an older church dedicated to the Irish St Rule, who was a contemporary of St Columba, and erected in the end of the 6th century during the mission to St Cainich—one of the companions of St Columba—who is said to have had a church at Kilmymont, although it is possible that the

word in the particular passage where this is mentioned may refer rather to the district generally than to the position of the modern town.

In those early days of St Andrews the primacy was at Abernethy, but it must have been removed to St Andrews during the next century and a half, whether by Kenneth II. or Grig cannot now be settled, for in 908 Bishop Cellach of St Andrews appears as the leading churchman in the great council held by King Constantine at the Mote Hill of Scone. Cellach was the first bishop, and he was succeeded by ten Culdee bishops, the last being the second Fothad or Modath, who performed the ecclesiastical rites at the marriage of Malcolm Ceanmhor and Margaret. The next three bishops all died before consecration, and for about 16 years after the death of Malcolm the bishopric appears to have been vacant. The thirteenth bishop was Turgot, Queen Margaret's confessor, who ruled from 1109 to 1115—the first bishop not of native birth—during whose episcopate the Culdee influence began to decline. At some period prior to 1107 the Culdee community had split up into two sections, each of which carried with it a portion of the spiritualities and temporalities which we may reasonably conceive had been originally combined. On the one side were a prior and twelve brethren representing the old foundation, and as clerical vicars performing divine service, and holding part of the estates as well as receiving the minor dues; the other party consisted of the bishop and the representatives of the abbot and other greater officers, secularised, yet enjoying another portion of the estates and the greater ecclesiastical dues. The appropriation of church revenues by secular officials began early in the 12th century to be regarded as a scandal, and a further blow was dealt at the practice in the time of the seventeenth bishop, Robert (1121-59), by the establishment in 1144 of a body of canons regular, to whom was granted the hospital as well as a large amount of other ecclesiastical property, and thus 'there were now two rival ecclesiastical bodies in existence at St Andrews—one, the old corporation of secular priests, who were completely thrown into the shade, and shorn of many of their privileges and possessions; and the other, that of the regular canons, who virtually represented the secularised portion of the old institution, and entered on the enjoyment of their estates. But this rivalry or co-existence was very distasteful to the chief authorities, both lay and ecclesiastical, as soon became manifest.' Immediately upon the foundation of St Andrews, King David, as he did also in the case of Lochleven, made an ordinance that the prior and canons should receive into incorporation with them the Keledei of Kilmoryont, who were to become canons provided they would conform to canonical rule. If they refused they were to be merely liferent in their possessions, and as they died out regular canons were to be appointed in their room. The influence of the Culdees was, however, strong, for, notwithstanding this edict, Malcolm IV. confirmed them in their possessions in 1160, and though every pope from 1147 to 1248 issued an injunction that from the time of his edict vacant places should be filled by regular canons, it seems never to have been possible to enforce the order. In 1199 they had a quarrel with the regular prior, and compromised matters by giving up their rights as to dues, while they were allowed to hold the tithes of their own lands. They clung to their prescriptive right to take part in the election of a bishop down to 1273, when they were excluded under protest, and in 1332 they were absolutely excluded, and seem to have abandoned their claim. They, however, retained possession of their lands in the *Cursus Apri*, and although the name of Culdee does not appear after the early part of the 14th century, the institution remained under the names of 'Præpositura ecclesie beate Marie civitatis Sancti Andree,' the 'ecclesia beate Mariæ de Rupe,' and 'the Provostry of Kirkheugh' till the Reformation, when the provostry became vested in the Crown, and in 1616 it was annexed to the see of St Andrews (see Dr Reeves' *Culdees*). What was the size of the bishopric as origin-

ally established is not known, but in the time of Malcolm IV. it embraced the counties of Fife, Kinross, and Clackmannan, the three Lothians, Berwickshire, Roxburghshire, and parts of Perthshire, Forfarshire, and Kincardineshire, and though it was afterwards lessened by the erection of new sees, the extent and importance of St Andrews always remained very great, and at the Reformation the archbishop held the patronage of 131 benefices, and administered the affairs of 245 parishes, the diocese being divided into 2 archdeaconries and 9 rural deaneries. The benefactions of some of the bishops are subsequently noticed. The last bishop was James Kennedy (1440-66)—the thirty-sixth from Cellach—his successor, Patrick Graham (1466-78), having obtained from Pope Sixtus IV. a bull erecting the see into an archbishopric. The document is lost, and the exact date is not known, but it seems to have been issued in 1471 or 1472. The bishop of York had originally the supervision of the portion of the kingdom of Northumbria, along the S side of the Firth of Forth, and after the introduction of the line of bishops of English birth beginning with Turgot, he repeatedly claimed the bishop of St Andrews as his suffragan, and though the claim was always indignantly set aside by the Scottish authorities it was revived from time to time down to this period, when St Andrews became the metropolitan see of Scotland, the suffragans being the bishops of Dunkeld, Dunblane, Brechin, Aberdeen, Moray, Ross, Caithness, and Orkney. Poor Graham did not, however, long enjoy his new dignity, for the jealousies and quarrels in which his elevation involved him seem to have driven him mad, and after a formal trial in 1477 he was early in 1478 deposed by a bull of Pope Sixtus IV. and imprisoned first at Inchcolm and afterwards in the priory at Lochleven. Including Graham there were eight Roman Catholic archbishops—the most famous being James Beaton (1522-39) and his nephew Cardinal Beaton (1539-46), and the last John Hamilton, who was executed on a charge of treason in 1571. The bishops and archbishops were lords of regality and ultimate heirs of all confiscated property within their domains; they levied customs; and they seem also to have had, at times at all events, the power of coining money. The archbishops also presided at synods, controlled the appointment of abbots and priors, were included with the king in the oath of allegiance, and took precedence next after the royal family, and before all Scottish noblemen whatever. After the Reformation there were three Tulchan bishops, the last of whom, George Gladstones, had also from 1610 till his death in 1615 some real ecclesiastical functions. He was succeeded by the well-known John Spotswoode (1615-39), after whose time there was no archbishop till James Sharpe (1661-79), who was assassinated at MAGUS MUIR, and who was succeeded by Alexander Burnet (1679-84). Burnet was succeeded by Arthur Ross (1684-88), who was the last of the archbishops till the re-establishment of the titular dignity by the Roman Catholic Church in 1878. The modern bishopric in connection with the Episcopal Church was originally constituted in 1720 as a bishopric of Dunkeld, Dunblane, and Fife, but this title was, at the synod held at Aberdeen in 1844, exchanged for that of Bishop of St Andrews, Dunkeld, and Dunblane. This see has been already noticed.

The town, which has been the scene of some of the most memorable events recorded in Scottish history, is of great antiquity, and must indeed have originated soon after the first settlement of the churchmen. The great creator of royal burghs, David I., granted it a charter about 1140, the first provost being a Fleming called Maynard; but the oldest charter existing is a confirmation by Malcolm IV. 'to the burgesses of the bishop of St Andrews of all the liberties and privileges which my burgesses have in common over the whole of my dominions, and at whatever parts they may land.' This grant of free trade led in 1369 and the following years to a long dispute with the burgesses of Cupar-Fife, who had just obtained a charter from David II.,

and who wished to prevent the citizens of St Andrews from trading within the bounds of Cupar without payment of customs, but the dispute was settled by parliament in favour of St Andrews. In 1408 John Reseby an Englishman, was burned alive on a charge of heresy, his chief offence seemingly being his upholding the doctrines set forth by Wyclif; and here also perished in 1432 Paul Crawler or Craw, a German physician, accused of propagating the doctrines preached by Huss and Jerome of Prague; and in 1527 Patrick Hamilton, lay Abbot of Fearn, suffered the same fate. He was a young man of great accomplishments and of powerful family, as he was the son of Sir Patrick Hamilton of Kincauld, and Catherine, daughter of the Duke of Albany, and a nephew of the Earl of Arran; but this did not save him from Archbishop James Beaton and his court, who, having 'founde the same Mr Patrike many wayes infamed wyth heresie, disputing, holding and maintaynyng divers heresies of Martin Luther and hys folowers, repugnant to our fathr,' therefore declared 'the sayde Mr Patrick Hameltone, for his affirmynge, confessing, and maintaynyng of the foresayd heresies, and his pertinacitie (thei being condemned already by the Church, general Councils, and most famous Universities), to be an heretike,' and so handed him over to the secular power to be punished, and he was burned in the open space in front of St Salvator's Church. Within a few years this execution was followed by that of a young Benedictine named Henry Forrest, who, for the heresy of declaring that Patrick Hamilton had been put to death unjustly, was burned 'at the North Church stile of the Abbey Church of St Andrews, to the intent that all the people of Angus might see the fire, and so might be the more feared from falling into the like doctrine.'

In 1588 King James V. came here to receive Mary of Guise, who, says Pitsoctie, 'landed in Scotland, at the place called Fyfeness, near Balcomy, where she remained till horse came to her. But the king was in St Andrews, with many of his nobility, waiting upon her home-coming. Then he, seeing that she was landed in such a part, rode forth himself to meet her, with the whole lords, spiritual and temporal, with many barons, lairds, and gentlemen, who were convened for the time at St Andrews in their best array; and received the queen with great honours and plays made to her. And first, she was received at the new Abbey-gate, upon the east side whereof there was made to her a triumphant arch, by Sir David Lindsay of the Mont, lyon-herald, which caused a great cloud come out of the heavens above the gate, and open instantly; and there appeared a fair lady most like an angel, having the keys of Scotland in her hands, and delivered them to the queen, in sign and token that all the hearts of Scotland were open to receive her grace; with certain orations and exhortations made by the said Sir David Lindsay to the queen, instructing her to serve her God, obey her husband, and keep her body clean, according to God's will and commandments. This being done, the queen was received unto her palace, which was called The New Inns, which was well decorated against her coming. Also the bishops, abbots, priors, monks, friers, and canons regular, made great solemnity in the kirk, with masses, songs, and playing of the organs. The king received the queen in his palace to dinner, where was great mirth all day till time of supper. On the morn, the queen past through the town, she saw the Blackfriars, the Gray-friers, the old college and the new college, and St Leonards; she saw the provost of the town and honest burgesses: But when the queen came to her palace, and met with the king, she confessed unto him she never saw in France, nor no other country, so many good faces in so little room, as she saw that day in Scotland: For she said it was shewn unto her in France, that Scotland was but a barbarous country, destitute and void of all good commodities that used to be in other countries; but now she confessed she saw the contrary: For she never saw so many fair personages of men, women, young babes and children, as she saw that day;' and so 'the king remained in St Andrews the

space of forty days, with great merriness and game, as jousting, running at the lists, archery, hunting, hawking, with singing and dancing in maskery, and playing, and all other princely game, according to a king and a queen.'

After the appointment of Cardinal Beaton to the archbishopric the city was in Mar. 1546 the scene of the martyrdom of George Wishart, who was burned in front of the Castle for heresy, an execution that led to the speedy death of the Cardinal himself in the following May, when he was murdered by a number of Wishart's friends. Norman Leslie, eldest son of the Earl of Rothes, his uncle John Leslie, Kirkcaldy of Grange, and others, having, with a small body of followers, obtained admission to the Castle early in the morning, when the drawbridge was lowered to admit some workmen, made themselves quietly and in a very short time masters of the building, and having succeeded afterwards in forcing their way into the Cardinal's chamber, they put him to death with their swords and daggers, one of their number telling him, ere he stabbed him, that the blow he was about to deal was not the mercenary one of a hired assassin, but the just vengeance which hath fallen on an obstinate and cruel enemy of Christ and the holy Gospel.' The workmen and servants who had been driven out of the Castle had meanwhile raised the alarm in the town, and 'the provest assembles the communitie, and cumis to the fowseis syd, crying, "What have ye done with my lord cardinal? Whare is my lord cardinal? Have ye slayne my lord cardinal? Lett us see my lord cardinal!" Thei that war within answered gentilye—"Best it war unto yow to returne to your awin housis; for the man ye call the cardinal has received his reward, and in his awin persone will truble the world no more." But then more enragidye thei cry, "We shall never departe till that we see him." And so he was brought to the east blokhouse head and schawen dead over the wall to the faithless multitude, which wold not believe befor it saw: How miserably lay David Betoun, cairfull cardinal. And so thei departed, without *Requiem eternam*, and *Requiescat in pace* song for his saule.' The body lay for a time, as is noticed under the Castle, at the bottom of a vault in the sea-tower, but was ultimately buried either at Kilrenny or in the churchyard of the Blackfriars monastery. The band of conspirators numbered at first only sixteen, but others soon gathered to them, and so strong was their position, that they held out for fourteen months against the royal forces, but were at last compelled to surrender by a French force which assailed the Castle by land and sea, and battered it with cannon placed on the top of the town steeples; and so 'at last they concluded that they would give it over to the King of France's will, as they did. Then the Frenchmen entered the castle, and spoiled very rigorously, where they got both gold, silver, clothing, bedding, meat and drink, with all weapons, artillery, and victuals, and all other plenishing, pertaining to the said castle, and left nothing behind them that they might get carried away in their galleys; and took all the captains and keepers of the said castle as prisoners, and had them away to the king of France.' In April 1558 Walter Mill, parish priest of Lunan, a decrepit old man of over 80 years of age, was burnt for heresy in front of the main gate of the Priory, but so strongly was the popular resentment expressed on the occasion that he was the last of the Reformation martyrs. One of the garrison that had defended the Castle was John Knox, who was carried off to France with the others and condemned to service in the galleys, but who was destined to return in triumph in 1559, when, meeting the Earl of Argyll and Lord James Stewart by appointment at St Andrews, he preached there in spite of the threats of the bishop, who had sent word 'to him that if he appeared in the pulpit he would give orders to the soldiers to fire upon him.' His sermons at this time, on the 14th of June and the three following days, led up to the popular outbreaks that made the Lords of the Congregation masters of the whole kingdom. Queen

Mary was at St Andrews in 1563 and in 1564, and it was on the former occasion that Chatelar was here tried and executed for the crime of forcing his way into the queen's apartment while she was resting at Burntisland for a night. In 1583 James VI. having obtained permission from the Earls of Mar, Gowrie, Glencairn, and others, into whose hands he had fallen at the Raid of Ruthven, to visit his uncle the Earl of March, who was living at the Priory of St Andrews, entered the Castle and caused the governor immediately to shut the gates and refuse admission to the adherents of Gowrie, who had accompanied him from Falkland. When he had thus gained his liberty he soon gathered a body of nobles about him and issued a proclamation 'commanding all the lieges to remain quiet, and discharging any noblemen or gentlemen from coming to court accompanied by more than the following number of attendants: viz., fifteen for an earl, fifteen for a bishop, ten for a lord, ten for an abbot or prior, and six for a baron, and these to come peaceably under the highest penalties.' Whether it was from this circumstance or from its being a seat of learning, certain it is that James retained a strong liking for St Andrews, and visited it often while he remained in Scotland; and when, in 1617, he revisited his native country with 'a salmon-like instinct to see the place of his breeding,' he convened an assembly of the clergy at St Andrews, and addressed them in a speech of considerable length, in which he proposed the introduction of Episcopacy, and upbraided them with what he called 'having mutinously assembled themselves and formed a protestation to cross his just desires.' In 1586 and again in 1605 there was a violent outbreak of plague in the city, and in 1609 it was the scene of the trial of Lord Balmerinoch, one of the Secretaries of State, who, being found guilty of having surreptitiously procured the king's signature to a letter addressed to the pope, was sentenced to have his hands and feet cut off, and his lands and titles forfeited, but the first part of the sentence was remitted. In 1650 Charles II. visited St Andrews, and was received at the West Port by the provost and magistrates, who presented him with silver keys; and afterwards Dr Samuel Rutherford made him a long address in front of St Mary's College. During the subsequent troubles the importance of the town rapidly diminished, and its affairs had become so bad by 1655, that in that year the council humbly represented to General Monk, Commander-in-chief in Scotland, that in consequence of the total failure of trade the town was utterly unable to pay the assessment of £43 imposed by him. So far had this process of decay gone in 1697 that a proposal was made to remove the university to Perth, some of the reasons given being that the 'place being now only a village, where most part farmers dwell, the whole streets are filled with dunghills, which are exceedingly noisome and ready to infect the air, especially at this season (September) when the herring guts are exposed in them, or rather in all corners of the town by themselves; and the season of the year apt to breed infection, which partly may be said to have been the occasion of last year's dysentire, and which from its beginning here, raged through most part of the kingdom.'

From this time its deserted condition became still worse, till by 1830 it had become, as has been already described, little more than a country village, with but the spacious streets and fine ruins to serve as marks of its former grandeur, a state from which it was revived by the vigorous exertions of Sir Hugh Lyon Playfair. It was then quite neglected by tourists, and deemed too secluded and bleak to be thought of as a watering-place, but by 1855 there was such a change, that on the 1st January of that year Provost Playfair was able to tell the citizens that 'In consequence of the cleanliness of the streets and the taste displayed in ornamenting the houses, the fame of St Andrews has spread abroad. This well-deserved celebrity is rapidly extending. Strangers from every quarter are induced to reside amongst us.' This progress was greatly aided by the opening of the railway in 1853, and now what Lord Teignmouth desiderated viz., that it should

be visited by strangers in some due proportion to 'its own picturesque situation, the extent, diversity, and grandeur of the remains of its ancient secular and ecclesiastical establishments, the importance of the events which they attest, and the celebrity which it has derived from the records of historians and the descriptions of topographical writers'—has more than come to pass, and though the ancient university is not in such a flourishing state as might be wished, the town has become one of the most fashionable summer resorts on the E coast of Scotland, 'the season' lasting from June to October. On each side of the town are great stretches of sands, those on the west side stretching to the Eden, on whose banks are famous mussel beds. Cockles innumerable are found in the sand, and in the neighbourhood of the town about 130 species of shells may be collected. Raised sea beaches are to be seen along the coast to the east of the town, while in an old charter there is mention made of a broad extensive lawn separating the castle from the sea, so that the sea would seem to have been again making encroachments on the land. The great summer amusement in St Andrews is golf, the practice of which has been much encouraged everywhere by the Royal and Ancient Golf Club of St Andrews, established in 1754 by a body of 22 gentlemen, headed by the Earls of Elgin and Wemyss. The club, which was the first instituted, has the Queen and Prince of Wales as patrons, and numbers upwards of 800 noblemen and gentlemen as members, holds two great meetings annually, one in May and the other about the end of September, at which various medals are competed for, among them being the highest honour of the year—the gold medal presented by King William IV. in 1837—the contest for which takes place in October. The captain for the year wears a gold medal gifted by Queen Adelaide in 1838.

Antiquities, &c.—The ruins of the cathedral are close to the shore, at the E end of the town, between the point where the three main streets branch off westward and the harbour. The first building was begun by Bishop Arnold (1160-62) in 1161, but was not finished till the time of Bishop Lamberton (1297-1328) in 1313, the work having been carried on by eleven successive bishops. During its progress in 1276 the eastern end was greatly injured during a violent tempest, and in 1373, only sixty years after completion, the roofs of the choir, east aisle, and transepts, and part of the great central tower, were much damaged or totally destroyed by an accidental fire said to have been caused by a jackdaw carrying a lighted brand to its nest about the roof of the cathedral. The restoration was begun at once by Bishop William Landel (1341-85), and completed in the time of Bishop Henry Wardlaw (1404-40), who in 1430 greatly improved the interior by laying fine pavements in the choir, transepts, and nave, and also filled in the windows of the nave with stained glass, and formed a large window in the eastern gable. From about 1440 the building remained in all its grandeur till 1559, when it was destroyed by a 'rascal multitude' of Reformers, who had been urged on to their work of destruction by four successive days of the fiery eloquence of John Knox in those famous sermons against idolatry, wherein he 'did intreat [treat of] the ejectione of the buyers and the sellers furthe of the temple of Jerusalem, as it is written in the evangelists Matthew and John; and so applied the corruptione that was then to the corruptione in the papistrie; and Christ's fact to the devote [duty] of thois to quhome God giveth the power and zeill thereto, that as weil the magistrates, the proveist and bailies, as the commonalty, did agree to remove all monuments of idolatrie, quhilk also they did with expeditione'—with such expedition indeed that in a single day the magnificent building, which had cost so many years of labour and so much toil and thought, was utterly ruined, amid

—(Steir: strabush and stife,
Whan, bickerin' frae the towns o' Fife,
Great bangs of bodies, thick and rife,
Gaed to Sanct Androis town,

And, wi' John Calvin i' their heads,
And hammers i' their hands, and spades,
Enrag'd at idols, mass, and beads,
Dang the Cathedral down,

From this time the ruins were used as a convenient storehouse of building materials, whence every man 'carried away stones who imagined he had need of them,' down till 1826, when the Barons of the Exchequer took possession of what remained, and clearing away the *debris* exposed the bases of the pillars, and did whatever else they could to conserve the ruins. The total length inside has been 358 feet, the width across the nave and choir 62 feet, and the width across the transepts 160 feet. The nave and choir had lateral aisles, and the transept an aisle on the E side, while at the extreme E end was a projecting Lady chapel about 33 feet square. 'All that remains of the edifice is the east gable, part of the west front, the wall on the south side of the nave, and that of the west side of the south transept. In this last may still be seen the remains of some interlaced arches, and the ruins of the steps by which the canons descended from the dormitory to the church to perform their midnight services. The standing walls contain thirteen windows, of which the six nearest the west have pointed arches with single mullions, and the remaining seven semicircular arches. This transition from the latter style to the former took place in the 13th century, just at the time when we know the church was about one-half completed. The great central tower was built on four massive piers, the bases of which may still be seen at the intersection of the nave with the transepts, though of the precise form of the tower we have no account. The bases of a few of the pillars also exist; those of the nave being oblong, unequally-sided octagons seven feet by six, while those in the choir are circular and beautifully clustered, five feet and three-fourths in diameter. The east gable consists of three very ancient oblong windows, with semicircular arches and a large window above them. These are situated between two turrets which terminate in octagonal pinnacles. In these turrets are yet seen the terminations of the three rows of galleries, one above the other, which, when entire, ran round the whole clerestory, passing in some places within the thickness of the walls, and in other places opening by arcades into the interior of the church. The west front consists of a pointed arched gateway, ornamented with rich mouldings. Immediately above it were two windows, of which only one is entire; and above these again there appear to have been two arches of somewhat larger dimensions. Only one of the turrets of the west front is standing; it is of delicate and elegant workmanship, and terminates in an octagonal lantern pinnacle. There is no appearance of buttresses in any part of the ruins except at the north-east angle of the Lady chapel, where there is the base of a very substantial one. There was, doubtless, another at the corresponding south-east angle.' The wall near the S transept, with a number of stone seats, formed part of the chapter-house. At the opening between the cloister and the chapter-house is a richly-carved gateway. The bells from the various turrets are said to have been sent away by sea to be sold, but the ship on board which they were sank in St Andrews Bay. The architecture is partly Norman, partly Early English. Near the site of the high altar is a large, flat, blue stone, probably marking the burial-place of one or more of the bishops. In the churchyard around are a number of interesting tombstones. On that of the celebrated Dr Samuel Rutherford the following verses are added after the epitaph:—

'What tongue, what pen or skill of men
Can famous Rutherford commend,
His learning justly rais'd his fame,
True godliness adorn'd his name,
He did converse with things above,
Acquainted with Emanuel's love;
Most orthodox he was and sound,
And many errors did confound,
For Zion's King and Zion's cause,
And Scotland's covenanted laws

Most constantly he did commend,
Until his time was at an end,
'Then he wane to the full fruition
Of that which he had seen in vision.'

On an old tablet on which is a rude carving of two figures with joined hands, and an inscription in memory of 'Christiane Bryde, spous to James Carstairs, Baillie of St Andrews,' is a line with the curious play upon words 'Yet rede my name, for Christ-ane Bryde am I.' Among more recent monuments may be noticed a finely executed female figure looking up to a cross. It was designed and cut by Mr Hutchison, R.S.A., in 1881. In the new burying-ground is a handsome Maltese Cross marking the last resting-place of Principal Tulloch.

About 120 feet SE of the E end of the cathedral is the unique little Romanesque church of St Regulus or St Rule, with its lofty square tower. It probably occupies the site of the older Culdee cell, and was used by the Roman party as the church before the erection of the cathedral. The greater portion of it has in some mysterious way been preserved from the destruction that has befallen the surrounding buildings. What now remains consists of a square tower 112 feet high and 20 feet 8 inches broad at the base. The chapel is 81 feet 8 inches long and 25 feet broad; the height from the floor to the top of the side walls is 29 feet 7 inches, and to the apex of the original high-pointed roof, as shown by the mark on the tower wall, is 55 feet 5 inches. Marks of three successive roofs may be seen on the tower wall. The arches are round-headed and very plain, the tops of the narrow windows being carved out of one slab. The chancel arch, and indeed all the proportions of the building are highly remarkable for the great height in proportion to width. Whether there ever was a nave is doubtful, as no remains of one have ever been discovered, but on the other hand, some of the early seals represent a church—sometimes presumed to be this one—with a central square tower and nave and choir. The masonry is good and substantial, and the stone of such excellent quality that the walls do not look so much weatherworn as those of the cathedral, though they must be much older. The interior of the chapel forms the resting-place of several noted persons, amongst whom may be mentioned Dr Robert Chambers, author and publisher, and immediately west of the tower is the grave of Samuel Rutherford. The exact date of the structure can be only vaguely assigned to the 10th, 11th, or 12th centuries, most probably the beginning of the latter, if we are to identify it with the church erected by Bishop Robert (1126-58) in 1144. It is just possible, however, that the tower may be older, and be akin to the round towers of Abernethy and Brechin, and like them intended as a place of security. If this be so, it was probably erected by the devotees of the Celtic Church, but Bishop Robert, finding it suited for his purpose, added to it the little church he erected here on the introduction of the canons-regular in 1144, after cutting openings in the E and W walls to provide access to the nave and choir. The St Andrews sculptured stones and the famous sarcophagus were found near this tower. There was originally no stair or trace of stair in it, but the present one was introduced in 1789 when the rubbish about the building was cleared away and the walls repaired at the expense of the Exchequer. Further repairs were executed in 1841. From the top of the tower a splendid view is to be had of the town and neighbourhood, and of the bay out to the Bell Rock. Inside is to be seen an old log, the transom beam of one of the ships of the Spanish Armada. For a long time this beam served as the lintel at the porch of the burying-ground. St Rule's cave is subsequently noticed, and both cave and church were long much resorted to by pilgrims, as sung by Scott in *Marmion*—

'But I have solemn vows to pay,
And may not linger by the way,
To fair St Andrews bound,
Within the ocean-cave to pray,
Where good Saint Rule his holy lay,
From midnight to the dawn of day
Sung to the billows' sound.'

A very old chapel, possibly the first one erected by the Culdees, and known as the church of St Mary on the Rock, is said to have stood on the Lady's Craig, a reef near the pier, but no trace of it now remains. Another chapel, also dedicated to the Virgin, stood on the Kirk Hough, immediately W of the harbour, and was known as the Chapel of the King of Scotland on the Hill, whence, according to some, the early name of the place—Kilrimonth. All traces of it were for a long time lost, but in 1860 the foundations were discovered, and show it to have been, in its later form at any rate, a cruciform structure 99 feet long, 20 feet wide across the nave, and 84 feet wide across the transepts.

The Priory or Augustinian Monastery, to the S of the cathedral, founded by Bishop Robert (1126-58) in 1144, and one of the finest structures of the class in Europe, has now almost disappeared. The precinct, comprising about 20 acres, was enclosed about 1516 by Prior John Hepburn (1482-1522), by a magnificent wall, which, starting at the NE corner of the cathedral, passed round by the harbour and along behind the houses, till it joined the walls of St Leonard's College on the SW. This, about a mile in extent, is all that now remains, but it must at one time have passed back from the college to the cathedral. The wall is 20 feet high and 4 thick, and has 13 turrets, each of them with canopied niches for an image. The portion towards the shore has a parapet on each side, as if designed for a walk. There were 3 gateways, of the chief of which, now called the Pends, on the SW, considerable ruins still remain. These consist of walls 77 feet long by 16 broad, with a pointed arch at each end, and marks of 3 intermediate groins. One of the other gateways is near the harbour, and the third on the S side.

Martine, the secretary of Archbishop Sharpe, who wrote in 1683, though his account was not published till 1797, mentions in his *Reliquiae Divi Andree* that in his time fourteen buildings were discernible besides the cathedral and St Rule's Chapel. Among these the chief were the Prior's House or the Old Inn, to the SE of the cathedral, of which only a few vaults now remain; the cloisters, W of this house, now the garden of a private house, in the quadrangle of which the Senzie Fair used to be held, beginning in the second week of Easter, and continuing for 15 days; the Senzie House or house of the sub-prior, subsequently used as an inn, but now pulled down and the site occupied by a private house; the refectory on the S side of the cloister, which has now disappeared; the dormitory, between the prior's house and the cloister, from which, as Fordun relates, Edward I. carried off all the lead to supply his battering machines at the siege of Stirling, now also gone; the Guest Hall, within the precinct of St Leonard's College, SW of Pends Lane; the Teinds' Barn, Abbey Mill, and Granary, all to the SW; and the New Inn, the latest of all the buildings of the monastery, erected for the reception of Magdalene, the first wife of James V. The young queen, who was of delicate constitution, was advised by her physicians to reside here, and the New Inn was built for her accommodation in, it is said, a single month. The queen, however, did not live to occupy the house, as she died on the 7th of July 1537, six weeks after her arrival in Scotland. It was, however, for a short time the residence of Mary of Guise, when she first arrived in Scotland, and after the priory was annexed to the archbishopric in 1635, the building became the residence of the later archbishops. The prior had superiority over the priories of Pittenweem, Lochleven, Monymusk, and the Isle of May, and was also a lord of regality. As a baron, he took precedence in parliament of all priors, and he, his sub-prior, and his canons formed the chapter of the cathedral. From 1144 to 1535 there were 25 priors; from 1535 to 1586 the lands were in possession of the Earl of Murray and Robert Stewart, the latter entirely and the former most of the time being merely lay commendators; from 1586 to 1606 they were held by the Crown; from 1606 to 1635 by the Duke of Lennox; from 1635 to 1639 by the

Archbishop of St Andrews; from 1639 till 1661 by the University; from 1661 till 1688 by the archbishops again; and from 1688 by the Crown. The part within the abbey wall was sold by the Commissioners of Woods and Forests to the United College for £2600.

A Dominican Monastery, which stood on the S side of South Street, near the West Port, was founded in 1274, by Bishop Wishart (1273-79), and was governed by a prior, who was not subject to the Episcopal control. The site and the adjacent ground passed at the Reformation to Lord Seton, and was subsequently made over to the town council as a site for a grammar school, and passed thereafter into the hands of Dr Bell's trustees. The ruin of the N transept of the chapel still stands on the street line, in front of Madras College. An Observantine or Greyfriars' Monastery, which stood immediately N of the West Port, at the W end of Market Street, was founded about 1450 by Bishop Kennedy (1440-66), and was completed in 1478 by Archbishop Graham (1466-78). It was governed by a warden, but the buildings, partially destroyed at the Reformation, have entirely disappeared. The grounds belonging to it were granted to the town council by Queen Mary.

The ruins of the Castle stand on a rocky promontory overhanging the sea, NNW of the cathedral. The original building is said, on the authority of Martine, to have been erected by Bishop Roger (1188-1202) as an Episcopal residence, the bishops having previously lived in the Culdee monastery at Kirkcough, or in the Priory. From the first it seems to have been a place of military importance, and when in 1332 the discontented Scottish barons, with Edward Baliol at their head, landed in Fife, the Castle fell into their hands, and was held by them till 1336, when it was recovered for David II. by Sir Andrew Moray of Bothwell, who dismantled it. About 1390 a new building was erected by Bishop Trail (1385-1401), and in 1402 the Duke of Rothesay set out to make an attempt to seize it, but was stopped by Albany at Strathgrym and carried off to die at Falkland. It is sometimes stated that he was confined here for a short time, but there seems to be no foundation for the assertion. James III. seems to have been born here, for in the 'Golden Charter' James II. speaks of the 'birth of his first-born son in the chief mansion of the city of the blessed Andrew.' In 1514, during a dispute about the succession to the archbishopric vacant by the death of Archbishop Stewart (1509-13), the Douglasses seized, and for a short time held, the Castle on behalf of Bishop Gavin Douglas, who was one of the candidates, but they were driven out by Prior John Hepburn as vicar-general for the time. In 1526 Archbishop James Beaton (1522-39) sided with the Lennox faction against the Douglasses, and so after the battle of Manuel, in which the latter party were victorious, they visited Fife and plundered the Castle, 'but he was,' says Pitcottie, 'keeping sheep in Balgrumo with shepherd's clothes on him like as he had been a shepherd himself.' As, however, he was 'a great man and had many casualties of tacks and tithes to be gotten at his hand,' the Douglasses soon came to terms with him, and he returned to his see. He became involved in other plots later, and was for a short time, in 1533, imprisoned in his own castle, as was also his nephew and successor, Cardinal David Beaton (1539-46), in 1543 by Arran when regent; though it is doubtful how far this latter imprisonment was real. In 1546 the Cardinal was murdered here, as has been already noticed, by a party of the Reformers, who held the Castle till the following year, when it was captured by a body of French troops, an expedition sent by Henry VIII. to their assistance having arrived too late. Many of the defenders, John Knox among others, were carried off to France and sent to the galleys. There is a very picturesque account of the siege in Pitcottie's *History*. The Castle, which had been much injured, was repaired by Archbishop Hamilton (1549-71), and in 1583 afforded refuge to James VI. till he freed

himself from the power of the lords who had seized on his person in the Raid of Ruthven. In 1606 the Castle was gifted to the Earl of Dunbar, but was restored to the archbishop (Gladstones, 1610-15) about 1612, for in the following year, during a meeting of the bishops at St Andrews, they were entertained by Gladstones in the Castle. After the battle of Philiphaugh a number of the prisoners were confined here, among others being Gordon of Haddo, Ogilvie of Inverquhar, and Sir Robert Spotswood, the first and last of whom, as well as some others of smaller note, were executed. After this time the building passed into the possession of the town council, who proved but sorry guardians, for in 1654 they ordered its 'sleatts and timber' to be used for the repair of the pier. The small portion that remains is now cared for by the Commissioners of Woods and Forests. The encroachments of the sea in its neighbourhood have been considerable, for Martine says that in his time there were people still living who remembered seeing bowls played on flat ground to the E and N of the Castle where now there is none, and in 1801 a considerable portion of the seaward walls of the building itself were undermined and fell. In the centre of the grass-grown court-yard is a rock-cut well about 50 feet deep, but the chief point of interest is the old bottle-shaped dungeon at the NW corner beneath the sea-tower. It is cut out of the solid rock, and is 7 feet in diameter at the top and 16 at the bottom, the depth being 18 feet. Many of the early Reformers with whose names St Andrews is associated are said—whether truly or not, none can tell—to have been confined in its dismal depths. It was also the original burial-place of Cardinal David Beaton after his murder in 1546. 'Now because the weather was hot,' says Knox, 'and his funerals could not suddenly be prepared, it was thought best . . . to give him great salt enough, a cope of lead, and a nuke in the bottom of the Sea-Tower, a place where many of God's children had been imprisoned before, to await what exsequies his brethren the bishops would prepare for him.' The open ground in front of the Castle was the scene of George Wishart's martyrdom in 1546. Some years ago, while digging the foundation for a new house opposite the Castle, the workmen discovered a subterranean passage leading under the moat into the Castle. This is supposed to have been used for provisioning the garrison in the time of siege, has been cleaned out, and is open for inspection. Longfellow has recorded his feelings on visiting the Castle:—

'Well have I seen that castle—
That castle by the sea,
And the moon above it standing,
And the mist rise solemnly.

'The winds and the waves of ocean,
They rested quietly;
But I heard on the gale a sound of wail,
And tears came to my eye.'

Public Buildings, etc.—The town-house and tolbooth were long in the centre of Market Street, but they have, since 1858-62, been superseded by the New Town Hall on the S side of South Street, at the corner of Queen Street. It is Scottish in style, and contains a council room, a police station, and public hall, with retiring rooms. The great hall is 75 feet long, 85 wide, and 24 high, and has accommodation for 600 persons. The Town Church, or properly the Church of the Holy Trinity, on the N side of South Street, near the centre, was originally built in 1112 by Bishop Turgot, and subsequently by Bishop Bernham dedicated to the Holy Trinity. It had, in the palmy days of the Roman Catholic Church, thirty altars, each with a separate priest and fifteen choristers; and it was here that John Knox preached the sermon that led to the destruction of the cathedral and the monastic buildings, as is afterwards noticed. The original building was a beautiful structure, partly Norman in style and partly First Pointed, but in the end of the 18th century it underwent vigorous restoration of the only kind then known. The groined roofs were removed from the side aisles, and

the outer walls raised nearly to the height of the original clerestory walls, the space so gained being utilized in the provision of galleries, by which the church, which is 162 feet long and 63 wide, was made capable of accommodating 2500 people. The interior has of late been very much improved. In it is preserved a fine specimen of the old Scottish branks, usually called the Bishop's Branks, and said to have been fixed on the heads of Patrick Hamilton and others of the earlier Scottish martyrs when they were put to death. This tradition seems, however, to be untrue, and its present name may be traced to the fact that Archbishop Sharpe made use of it for silencing a woman who had promulgated scandal about him openly before the congregation. From the top of the steeple there is a good view. The pulpit was not occupied by an Episcopalian clergyman from the time of the Revolution in 1688 till 16 March 1884, when the Bishop of St Andrews (Dr Wordsworth) preached on behalf of the University Missionary Society. In the interior, to the right of the main entrance, is a monument of black and white marble, erected in memory of Archbishop Sharpe, by his son, Sir William Sharpe of Scotsraig and Strathyrum. Executed in Holland, it shows an angel about to place the crown of martyrdom on the archbishop's head; above is a bas-relief representing him as propping up a falling church, while below another represents the murder. On an urn is a long Latin inscription of a most extravagant description, which describes the archbishop as 'a most pious prelate, a most prudent senator, and a most holy martyr,' and declares that Scotland 'saw, acknowledged, and admired' him 'as a chief minister of both her civil and ecclesiastical affairs,' Britain 'as the adviser of the restoration of Charles II. and of monarchy,' and the Christian world 'as the restorer of Episcopacy and good order in Scotland.' 'Whom all good and faithful subjects perceived to be a pattern of piety, an angel of peace, an oracle of wisdom, an example of dignity; and all the enemies of God, of the King, and of the Church found the implacable foe of impiety, of treason, and of schism.' Sir William also gave a sum of money to be applied to the relief of the poor on condition that this monument was kept in good repair in all time coming, and in 1849-50 the parochial board expended about £130 in restoring it to good condition. At this time the vault was opened, but no remains of the archbishop could be found. His skull and bones were probably removed, either when the church was altered in 1798, or in 1725 when the town council offered a reward of £10 sterling for the discovery of the person or persons who had entered the church and injured the monument. Some of the communion plate was presented to the church by Archbishop Sharpe. St Mary's Church, near the W end of Market Street, built in 1840, and greatly improved in 1870, contains 630 sittings. It has a fine oak pulpit and several stained-glass windows, two of them having been introduced in memory of the Rev. Dr Robert Haldane, by whose exertions the church was erected, and who was its first minister. A previous church of St Mary, of ancient date, and sometimes called the Kirkheugh Church, has been already noticed. St Leonard's or College Church; afterwards noticed, contains 896 sittings. A tall square tower somewhat resembling that at the cross of Glasgow rises at the W end of the church, and is surmounted by a stumpy octagonal spire. The Free church (Martyrs), on the opposite side of North Street, built in 1844, has a good front; it contains 864 sittings. The original U.P. church, built in North Street in 1826, had 380 sittings, but the present building with a spire in Market Street, built in 1865, has accommodation for 700. The Congregational church was originally a small building in Market Street, with 320 sittings, but the present place of worship, with 360 sittings, was erected in South Bell Street in 1856-58. The Baptist church in South Street, built in 1842, has 250 sittings. The original Episcopal church (St Andrew), in North Street, to the E of the College Church, was erected in 1825 at a cost of £1400, and enlarged in 1853 so as to have 180 sittings, but it was superseded

by the present building, erected in 1867-69, consecrated in 1878, and containing 530 sittings, a mosaic reredos, representing our Lord's Ascension, a beautifully carved oak pulpit, and a fine organ. Dr Rowand Anderson was the architect, and the style is that of the 13th century. The Coast Mission chapel (for seamen) is situated in Gregory's Lane. The Roman Catholic church (St James's) is a neat iron structure. The Gibson Memorial Hospital, founded and endowed by the late Mr William Gibson of Duloch, for the sick, aged, and infirm poor of the city and parish of St Andrews and of the parish of St Leonards, was erected in 1882-84 at a cost of £4000. The Recreation Hall with tennis courts, constructed at a cost of £2000 in 1883-84, contains a hall measuring 100 by 50 feet, and being about 30 feet high. There are also the Town Hall (in South Street), the City Hall (in Church Square), the Drill Hall (in City Road), and the Good Templars' Hall (in North Street). In Market Street is a handsome fountain, erected in 1880 in memory of Major Whyte Melville, the well-known novelist, and one of the four memorials of him instituted by his friends after his death, the others being a tombstone at Tisbury where he died, a monument in the Guards' Chapel, Wellington Barracks, London, and a sum forming the nucleus of an annuity fund in connection with the Hunt Servants' Benevolent Society. The fountain here, which cost about £800, is of red sandstone from Dumfriesshire, with steps, columns, and copings of Dalbeattie granite. The diameter is 14 feet, and the total height about the same. It rises in a series of three basins, and on the second, which is very elaborately carved, are four white marble medallions, one showing a bas-relief bust of Major Whyte Melville, executed by J. C. Boehm; other two respectively the family arms and the arms of the Coldstream Guards; and the fourth the following inscription:—

'This fountain is erected by many friends, rich and poor, to the beloved memory of George John Whyte Melville of Mount Melville, Bannochy, and Strathkinness; born 19th July 1821; died 5th December 1878, from an accident in the hunting-field near Tisbury, Gloucestershire. His writings delighted; his conversation charmed and instructed; his life was an example to all who enjoyed his friendship, and who now mourn his untimely end.'

Immediately to the W of the Castle is the ladies' bathing place, and about 150 yards farther W is the cave, or rather rock chamber, formerly known as St Rule's Cave, but now as Lady Buchan's, from having been fitted up by that eccentric person (the mother of Lord Chancellor Erskine), at the close of the 18th century, for tea parties. It is much worn away. A hundred yards NW of the Castle are the public baths, and farther W still are the Witch Lake and the Witch Hill, where, if the witch escaped death by the water ordeal at the former, she suffered worse doom at the stake on the latter. St Andrews was long troubled with witches, and we find it stated that even such a grave man as the Earl of Murray repaired to St Andrews in 1569, 'quhair a notabill sorceres callit Nicniven was condemnit to the death and burnt.' Some have been inclined to believe that she is the same witch mentioned* in Law's *Memorials* as having been burnt in 1572, and that the regent of the time would therefore be Morton. The author of the *Historie of King James the Sixth*, who tells the story, also adds that 'a Frenchman callit Paris, quha was one of the designeris of the King's [Darnley's] death, was hangit in St Andro, and with him William Steward, Iyoung king of armes, for divers pointes of witchcraft and necromancie;' and again in 1588 Alison Pearson, in Byrehill, was convicted and burnt on her own confession. She seems to have been a 'wise woman,' and to have by means of her prescriptions cured Archbishop Adamson of an illness, which she was

* She seems to have been a very bad specimen, for she is declared to have said openly that she cared not whether she went to heaven or hell; but on a white cloth 'like a collore craig with stringis whairon was mony knottis,' being taken from her person, she gave way to despair, and exclaimed, 'Now I have no hoip of myself.'

alleged to have transferred to a white pony, which died in consequence. Here, as elsewhere, a horrible form of death seemed to have no effect, for reputed witches continued to be found in Fife till the end of the 17th or the beginning of the 18th century, when the last one—a woman named Young, who lived in North Street—was burnt at the Witch Hill. Their fame, too, seems to have sometimes spread abroad, for in 1643 we find Spalding breaking off an account of the 'annoyans' of the king's subjects over the Solemn League and Covenant to record that 'about this tyme many witches are takin in Anstruther, Dysert, Culross, Sanctandroiss, and sindrie uther pairtis in the coast syde of Fyf. They maid strange confessions, and war brynt to the death.' The bay, between the Witch Hill and the point called The Step, is now the gentlemen's bathing-place. To the W of this is the Bow Butts, a sort of natural amphitheatre, where the citizens used anciently to practise archery, and where, from 1681 to 1751, the members of an archers' club competed annually for the right of affixing a medal with the name of the best shot to a silver arrow. The practice of archery was revived in 1833, but did not prosper; but now the pastime is carried on by many of the lady visitors. Immediately S of the Bow Butts is the Martyrs' Monument, erected in 1842-43 to commemorate the martyrs of the Scottish Reformation who suffered at St Andrews. It is an obelisk on a graduated base, and rises to a height of 45 feet. Farther W is the Golf Club House, containing a principal room, a billiard room, a reading-room, dressing-rooms, and stewards' apartments; and from the clubhouse the famous links, which are said to be the finest in the kingdom, extend north-north-westward to the mouth of the river Eden, a stretch of about 2 miles. They are simply sandy plains covered with coarse herbage and interspersed with bunkers and bent hills, but their now classic connection with the game of golf has been the making of modern St Andrews. They were acquired in 1894 by the city. There are nine holes out and nine in, the whole round being almost 3½ miles. The average number of strokes for very good players is from 87 to 97.

Educational Institutions.—The University of St Andrews is the oldest in Scotland, St Mary's College having been founded by Bishop Wardlaw (1403-40) in 1411, and in 1413 a series of six Bulls were obtained from Pope Benedict XIII. sanctioning the foundation and constituting a *Studium Generale* or University, where instruction was to be given in theology, canon and civil law, medicine, and the liberal arts, and power was also granted to confer degrees. The classes, which were under the care of 21 doctors or lecturers, were at first scattered throughout the city, each teacher being in a separate room, but the bishop soon provided accommodation for them in a building called the Pedagogy, in South Street. Under the royal patronage of James I., who confirmed all the charters in 1432, the young seat of learning prospered; and in the time of James II., in 1456, Bishop Kennedy (1440-66) founded and endowed a second college, which he dedicated to Christ, under the name of St Salvador. The foundation was confirmed by Pope Nicholas V., and subsequently fresh privileges were granted to the college by Pope Pius II. in 1458, and Pope Paul II. in 1468, the latter granting power to confer degrees in theology and arts. In 1512, Prior John Hepburn (1482-1522), in conjunction with Archbishop Alexander Stewart (1506-13), founded St Leonard's College, and endowed it with the revenues of an hospital, originally founded for the maintenance of poor pilgrims who had come to visit the shrine of St Andrew; and in 1537, Archbishop James Beaton (1523-39), with the approval of Pope Paul III., added to the endowments of the original Pedagogy, and erecting new buildings, dedicated the college to the Virgin Mary; while, in 1553, Archbishop John Hamilton (1546-71) granted additional endowments and obtained a fresh Bull of confirmation from Pope Julius III. In 1580 Andrew Melvil was transferred from Glasgow to St Andrews as principal, and the whole

arrangements of the colleges were remodelled, St Mary's being entirely set apart for the teaching of theology. The troubles of this and the following century greatly injured the University, and in 1697 a proposal was made that its seat should be transferred to Perth, some of the reasons given being that, at St Andrews, 'the climate is very severe; that the town is out of the way; that provisions are dear; that the streets are foul and full of noisome pestilence; that endemics and epidemics are common; and finally that the town's-folk do not look favourably upon learning, and frequently mob the students.' The scheme was abandoned, but a suspicion, in 1718, that both students and professors were tainted with Jacobitism and leanings towards Episcopacy led to a visitation by royal commission, and made matters still worse. By 1747 the revenues of the colleges of St Leonard and St Salvador were so much diminished that in that year an act of parliament was obtained, providing for the union of the two institutions, and the restriction of their teaching to arts and medicine, while in St Mary's theology alone was to be taught. This arrangement still holds good, and the University consists of the two corporations of the United College of St Salvador and St Leonard, with a principal and 9 professors, distributed into a Faculty of Arts and a Faculty of Medicine; and St Mary's College with a principal and 3 professors, forming a Faculty of Theology. In the Faculty of Arts the chairs, with the dates of foundation and patrons, are:—Greek (instituted at foundation of colleges; University Court); Humanity (1620; Duke of Portland); Logic and Metaphysics (instituted at the foundation of the colleges; University Court); Moral Philosophy (instituted at the foundation of the colleges; University Court); Natural Philosophy (instituted at the foundation of the colleges; University Court); Mathematics (1668; Crown). In the Faculties of Arts and Medicine both, is the Chair of Civil and Natural History, originally founded in 1747 as a chair of civil history only, but by an ordinance of the University Commission of 1858, the professorship is now practically devoted to Natural History, and falls under the Faculty of Medicine. The patron is the Marquis of Ailsa. In the Faculty of Medicine are the Chairs of Medicine and Anatomy (1721; University Court); Chemistry (1808, but no professor appointed till 1840, as the endowment did not become available till then; the Earl of Leven). There is also a principal appointed by the Crown, and apart from either faculty is the Chair of Education, founded by the Bell Trustees in 1876. A lectureship on Natural Theology was founded in 1887 by the late Lord Gifford; and there are also lectureships on botany and on the French language and literature. In St Mary's, in the Faculty of Theology, are the Chairs of Systematic Theology (instituted at the foundation of the college, and held always by the principal; the Crown); Divinity and Biblical Criticism (instituted at the foundation of the college; the Crown); Divinity and Ecclesiastical History (suppressed for some time for want of funds, but revived and endowed in 1707; the Crown); Hebrew and Oriental Languages (suppressed for some time for want of funds, but revived in 1668, and received additional endowment from William III. in 1693; the Crown). Connected with the University there are bursaries and fellowships worth nearly £2500 per annum. There are also a number of important prizes in books or money open to students in the different classes. In 1889 the University College of Dundee was affiliated to and made to form part of St Andrews University. (See DUNDEE.) In 1892 the classes in arts, science, medicine, and theology were opened to women students, who are taught along with men and prepared for graduation along with them. In 1893 the University received the sum of £30,000 to be spent in bursaries open to students of both sexes attending the University, one-half of this sum being devoted to women exclusively. The University corporation consists of the chancellor, rector, three principals, the professors, the registered graduates and alumni, and the matriculated students, the government being vested

in the University Court, the *Senatus Academicus*, and a General Council. The officials of the University are the chancellor (appointed for life by the General Council), the vice-chancellor (appointed by the chancellor), the rector (appointed for three years by the matriculated students), the parliamentary representative, the principal, and the assessors. The senior principal for the time being is principal of the University. The University Court consists of the rector, the principal, the principal of St Mary's College, the principal of University College, Dundee, the Lord Provost of Dundee, the Provost of St Andrews, the assessors, and two representatives appointed by the Council of University College, Dundee. It acts as a court of supervision and appeal from the *senatus*, and appoints to some of the chairs. The General Council consists of the chancellor, the rector, and other members of the University Court, the principals and professors, and all graduates who have been registered; and since 1881 this registration has been compulsory. The *Senatus Academicus* consists of the principals and professors, who superintend the teaching and discipline of the University. The session of the United College begins about the middle of October, and closes about the end of March; and that of St Mary's College commences early in November, and closes at the end of March. The summer session extends from the beginning of May till the middle of July. The students of the United College wear red frieze gowns with crimson velvet collars; those of St Mary's have no distinctive dress. The number of matriculated students in 1892-93 was 236, of whom 18 took the degree of M.A., 6 that of B.Sc., 10 that of M.D., and 6 that of B.D. The University has the privilege of granting the degree of M.D. to 'any registered medical practitioner above the age of 40 years whose professional position and experience are such as, in the estimation of the University, to entitle him to that degree, and who shall on examination satisfy the medical examiners of the sufficiency of his professional knowledge.' Formerly the number of such degrees that could be granted was unlimited, but it is now restricted to 10 every year, and the fee for the degree is fifty guineas. The General Council for 1893-94 contained 1514 members. It meets twice a year on the last Thursday of March and the last Friday of November. The University library contains upwards of 100,000 volumes and 160 MSS. Under the Reform Act of 1867 St Andrews University unites with that of Edinburgh in returning a member to serve in parliament, the electorate consisting of the members of General Council. Among the distinguished rectors since 1859 have been Sir William Stirling-Maxwell, J. S. Mill, J. A. Froude, Lord Neaves, Dean Stanley, Sir Theodore Martin, A. J. Balfour, and the Marquis of Bute; while connected with the University, either as professors or students, have been John Major, George Buchanan, John Knox, Andrew Melvil, James Melvil, Napier of Merchiston, the Admirable Crichton, Sir Richard Maitland of Lethington, Robert Rollock, the Marquis of Montrose, Samuel Rutherford, James Gregory (the inventor of the Gregorian telescope), Alexander Pitcairn, John Hunter, William Tennant (the author of *Anster Fair*), Thomas Chalmers, Sir David Brewster, James D. Forbes, Alexander Duff, John Tulloch, William Spalding, J. F. Ferrier, John Veitch, J. C. Shairp, Lewis Campbell, R. Flint, M. Forster Heddle, and H. A. Nicholson. Besides these the bishops and archbishops, from 1411 downwards, are all intimately associated with the history of the University.

The buildings of the United College stand near the centre of the N side of North Street, where they occupy three sides of a large quadrangle, 230 feet by 180. The site was originally that of St Salvador's College, the church of which occupied the S side of the quadrangle, while on the other three sides were the common hall, library, classrooms, and students' apartments. The church still remains, though greatly altered; but the other buildings, having become ruinous, were removed after the report of the University Commission of 1827, and the present classrooms on the N and E sides of the

quadrangle were erected between that date and 1847 at a cost of £18,600, the money being granted by Government. The entrance to the quadrangle is underneath a lofty tower at the W corner of the S side. It is a tall square structure, with a stumpy octagonal spire, the whole rising to a height of 156 feet. The College or St Leonard's Church, immediately to the E, is now looked on as the parish church of St Leonards, its use for that purpose dating from the early part of the 18th century. It contains a very elaborate monument to Bishop Kennedy, the founder of the college, said to have cost a sum equal to £10,000 sterling. It was greatly injured by the fall of the stone roof of the church about the middle of the 18th century. The tomb was opened in 1683, when six silver maces were found in it, of which three were presented to the other Scottish Universities and the remaining three were retained by the University of St Andrews. One of these last, which was made in Paris by Bishop Kennedy's orders in 1461, is very fine. In the vestibule of the church is a flat stone marking the grave of Dr Hugh Spens, principal of the College (1505-29); and on the N wall is a marble monument erected by his brother officers to the memory of the eldest son of the late Provost Playfair—Lieutenant W. D. Playfair, who fell at Sobraon in 1846. There is a good museum; and in the hall are portraits of John Hunter, Sir David Brewster, James D. Forbes, all of whom were principals; of Professors Ferrier and Macdonald, and others. At the union of the colleges of St Leonard and St Salvador in 1747 the buildings of the former, which were in South Street, near the E end, were sold, and now the ruined walls of the chapel alone remain. When Dr Johnson and Boswell were so hospitably entertained by the St Andrews professors this building was used as a 'kind of greenhouse,' and, adds the Doctor, 'to what use it will next be put I have no pleasure in conjecturing;' but, as he had always been hindered by some excuse from entering it, he admits that it was 'something that its present state is at least not ostentatiously displayed. Where there is yet shame there may in time be virtue.' It was afterwards used as an outhouse, but the virtue came in 1838, when it was cleared out, and since then the ruin has been properly cared for. It contains a fine monument to Robert Stuart, Earl of March, who died in 1611, and another in memory of Robert Wilkie, principal of the college (1589-1611). The official residence of George Buchanan when he was principal here (1566-70), a short distance S of the chapel, was the property and residence of Sir David Brewster when he was principal of the United College (1838-59). St Mary's College occupies the site of the old Pedagogy on the S side of South Street, the college buildings and University library forming two blocks at right angles, the library and the principal's residence being on the N, and the lecture rooms and old dining-hall on the W. The library, a plain structure, built at the expense of the University in 1764, and since greatly improved in 1829, superseded an older building which had been used as a provincial meeting-place for the Scottish parliament. It is divided into four large halls, the principal one 76 feet long, 28 wide, and 28 high. There are portraits of Cardinal David Beaton, George Buchanan, John Knox, Adam Fergusson, Bruce of Grangehill and Falkland (professor of logic at Edinburgh), Archbishop Spottiswoode, George Wishart, Principal Tulloch, and several of the chancellors. The nucleus of the present library was established in 1610 by the union of the libraries of the three colleges, and James VI., under whose auspices this took place, made a valuable gift of books to the new institution. Subsequent benefactors have been numerous, and there are now over 100,000 printed volumes and 160 MSS. Among the rarities may be specially mentioned a copy of the *Koran* that belonged to Tipoo Saib, a copy of Quintilian (1465), a Latin translation of the *Iliad* (1497), and the *Phrases* of Stephanus, both of which belonged to George Buchanan, and contain notes in his handwriting; a copy of the Canons of the Council of Trent that belonged to James Melvil, a fine MS. of the works

of St Augustine, a MS. of Wyntoun's *Cronykyl*, written in the latter part of the reign of James IV.; and the original copy of the Solemn League and Covenant, subscribed at St Andrews in 1643, and containing upwards of 1600 signatures. To the S of the buildings are the college gardens. St Andrews College Hall, to the SSW of the cathedral, opened in 1861, and belonging to a joint-stock company with a capital of £5000, serves as a residence for young gentlemen attending the University. It has accommodation for about 30 students, and is conducted by a warden, a tutor, and such other teachers as may be required. A building intended as a residence for lady students at the University was erected in 1894-95 at an estimated cost of £5000.

The Madras College, off the S side of South Street near the W end, was opened in October 1833, and superseded the old grammar and burgh schools. It was founded in terms of a bequest by Dr Bell, who was the first to introduce the monitorial or Madras system of school management. Dr Bell, who was the son of a hairdresser in St Andrews, and was educated at the University here, became, after various vicissitudes of fortune, superintendent of a male orphan asylum at Madras under the Honourable East India Company, and there originated his monitorial system. At his death he left a very large fortune, £120,000 of which was to be spent in the erection and maintenance of schools on his favourite system, and of this sum £60,000 was set apart for St Andrews, while the sums of £52 and £25 paid by the town as salaries to the masters of the former grammar and burgh schools have, since the opening of the new institution, been paid over to its funds. At first there were only two masters, but now there are masters of English, classics, mathematics and arithmetic, science, etc., modern languages, book-keeping, writing and shorthand, drawing and painting, vocal and instrumental music, and gymnastics; second masters in English and classics, and a teacher of sewing. The grounds cover a space of about 4 acres, and the school buildings are ranged round a quadrangle near the centre. A detached building to the W, built subsequently, contains 3 additional classrooms, and accommodation is provided altogether for 1540 scholars. At the two front corners of the ground adjoining South Street are houses for the English and classical masters, which provide accommodation for a considerable number of boarders. The college is now managed under the Educational Endowments (Scotland) Act. Connected with it is the Madras College Club, founded in 1871. Under the Burgh School Board the Burgh, East End, and Infant schools, with accommodation for 568, 359, and 280 pupils, had in 1893 attendances of 471, 187, and 246, and grants of £527, 9s. 3d., £149, 2s. 6d., and £208, 18s. There are also a number of private boarding and day schools for boys and girls.

Trade, etc.—During the 15th and 16th centuries St Andrews was one of the most important seaports to the N of the Forth, and was resorted to by merchant vessels from Holland, Flanders, France, and all the trading districts in Europe. The number of vessels in port at the time of the great annual local fair called the Senzie Market—held in the priory grounds in April—is even said to have been from 200 to 300, but if this be so they must have been of small tonnage, and probably not larger than a fair-sized herring boat. The trade, however, seems to have departed during the Reformation troubles, and in 1656 Tucker, one of Cromwell's Commissioners of Customs—who described the town as 'a pretty neat thing which hath formerly been bigger, and although sufficiently humbled in the time of the intestine troubles, continues still proud in the ruins of her former magnificence'—mentions that there was only 1 vessel of 20 tons burden belonging to the port, while upwards of a century later we find that there were only 2 small vessels. By 1838 these had increased to 14 vessels of, aggregately, 680 tons; and bonded warehouses having been subsequently fitted up, the place became a head port and yielded a customs revenue of about £700 a year. A great trade also

sprang up in the export to iron-works on the Tyne of calcined ironstone from workings near Strathkinness, but this did not last, and the port sank again to the position of a sub-port, and the shipping trade, particularly since the opening of the railway, has become very small, and is confined to export of grain and potatoes; and import of coal, timber, guano, salt, and slates. The harbour, formed along the small natural creek at the mouth of the Kinness Burn, has a pier extending eastward for about 420 feet from high-water mark, and outer and inner basins. At low water it is dry except for the stream flowing through it, and even at high water there is not sufficient depth of water to admit fully-laden vessels of more than 100 tons, and the entrance, which is narrow, and is exposed to the roll of the sea when the wind is easterly, is dangerous. Two guiding lights—the one a red light at the end of the pier, and the other a bright white light on a turret of the cathedral north wall—when brought into line indicate a vessel's course for the harbour. There were belonging to the port (1893) 26 first-class, 17 second-class, and 3 third-class boats engaged in the herring fishing.

Municipality, etc.—Created a royal burgh in 1140, St Andrews is now governed by a provost, 4 bailies, a



Seal of St Andrews.

dean of guild, a treasurer, and 22 councillors, who also are police commissioners, but the police force itself forms part of that of the county. The corporation revenue is about £1000 per annum. The burgh boundaries were extended in 1860; and a thorough system of drainage was introduced in 1864-65, and in 1894 new drainage and sewerage works were undertaken by the corporation, to cost over £1300. Gas is supplied by a private company, with works near the harbour. The town has a head post office, with money order, savings bank, insurance, and telegraph departments, branch offices of the Bank of Scotland, Clydesdale Bank, Commercial Bank, and Royal Bank, a National Security Savings Bank, and several excellent hotels. A newspaper—the *St Andrews Citizen and Fife News* (1871)—issued on Saturday, is printed at Cupar-Fife. The public reading-room and library was established in 1845, and acquired in 1847 the books belonging to the old subscription library. In 1867 the books of the St Andrews subscription library were acquired by purchase, and subsequently, in return for a sum of money voted by the town council from the Bell Fund for the purpose of clearing off debt, the whole library was declared public property. Other institutions and associations are a branch of the Royal National Lifeboat Institution, with a lifeboat; a volunteer life brigade, with a rocket apparatus; a troop of the Fife Volunteer Light Horse, a battery of artillery volunteers (one of the guns of which is a Russian trophy), a company of rifle volunteers, with the headquarters of the

5th Volunteer Battalion of the Royal Highlanders, a drill hall, baths, a memorial cottage hospital, a fever hospital, two masonic lodges, a young men's Christian association, a horticultural society, an archery club, a curling club, a skating pond, a bowling club, the St Andrews Golf Club (the Mechanics from 1843 to 1851), the St Andrews Thistle Golf Club (1865), the Royal and Ancient Golf Club already noticed, and several other golf clubs, including one for ladies. There is a marine laboratory and fish hatchery on the East Bents, opposite the harbour. There is a weekly corn market on Monday, a fair on the second Monday of April, and feeing markets on the second Tuesday of August and the Monday after the 10th November. Sheriff small debt courts for the parishes of St Andrews, St Leonards, Kingsbarns, Dunino, Cameron, Forgan, Ferry Port on Craig, and Leuchars, are held on the third Mondays of January, April, July, and October. Justice of peace courts for granting licences for the sale of excisable liquors for the county are held on the third Tuesday of April and the last Tuesday of October; and burgh licensing courts are held on the second Tuesday of April and the third Tuesday of October. The burgh unites with Cupar, Easter and Wester Anstruther, Crail, Kilsreany, and Pittenweem in sending a member to parliament, and is the returning burgh. Parliamentary constituency (1894) 944, municipal 1294. Valuation (1885) £36,083, 4s. 6d., (1895) £43,058, including railways. Pop. (1801) 3263, (1831) 4462, (1881) 6406, (1891) 6853, of whom 3928 were females.

See also Martine's *History of St Rule's Chapel* (St Andrews, 1787), and his *Reliquiae Divi Andree* (St Andrews, 1797); Grierson's *Delineations of St Andrews* (1807; 3d ed. 1838); *Liber Cartarum Prioratus Sancte Andree* (Bannatyne Club, 1841); C. J. Lyon's *History of St Andrews* (1843); C. Roger's *History of St Andrews* (1849); 'Early Ecclesiastical Settlements of St Andrews,' by Dr Skene, in the *Proc. Soc. Antiquaries of Scotland* for 1860-62; J. M. Anderson's *University of St Andrews* (Cupar, 1878); D. Hay Fleming's *Register of the Kirk-Session of St Andrews* (2 vols. Scottish Hist. Soc. 1889-90); Andrew Lang's *St Andrews* (Lond. 1894); and the Rev. A. K. H. Boyd's *Twenty-five Years of St Andrews* (2 vols. 1892), and *St Andrews and Elsewhere* (1895).

St Andrews, a parish, united *quoad civilia* to DEERNES, in the SE of the Mainland of Orkney, whose church stands near the W shore of Deer Sound, 6 miles ESE of the post-town, Kirkwall, whilst Deerness church, on the E coast, is 12 miles ESE of Kirkwall by road, though only 9½ as the crow flies. It is bounded NW by Kirkwall parish and Inganess Bay, N by Shapinsay Sound, NE, E, and SE by the North Sea, and SW by Holm parish; and it is deeply indented by Deer Sound, which, penetrating the land for 5½ miles south-westward and south-south-eastward, alternately broadens and contracts, from 3½ miles to 1 mile, from 1½ mile to 5 furlongs, and from 2 miles to 2½ furlongs. The parish thus consists of two natural divisions, connected by a sandy isthmus only 250 yards broad—St Andrews proper to the W and Deerness to the E. The former has an extreme length from NW to SE of 5½ miles, and a varying width of ½ mile and 5½ miles; the latter has an extreme length from SSW to NNE of 5 miles, and an extreme breadth of 3 miles; and the area of the whole is 12,830 acres. The coast is in places sandy, in places rocky, and sometimes precipitous; and the interior rises in St Andrews to 183, in Deerness at the Ward Hill to 285, feet above sea-level. The shallow fresh-water Loch of Tankerness (7 × 4½ furl.; 13 feet above the sea), lies 5 furlongs N of St Andrews church. The predominant rock is Old Red Sandstone, with interesting dykes of trap; and the soil is capable of much improvement. A curious cavern, the *GLOUP*, has been noticed separately. Tankerness Hall, near the NW shore of Deer Sound, is the chief residence. In the presbytery of Kirkwall and synod of Orkney, the civil parish since 1845 has been ecclesiastically divided into St Andrews and Deerness, the former a living worth £298. St Andrews church was built in 1801, and contains 400 sittings. There is

ST ANDREWS-LHANBRYD

also a Free church of St Andrews; and three public schools—Deerness, St Andrews, and Tankerness—with respective accommodation for 155, 55, and 83 children, had (1893) an average attendance of 123, 30, and 46, and grants of £175, 6s. 6d., £26, 18s., and £53, 4s. Valuation (1894) of St Andrews, £1925; of Deerness, £1876, 17s. Pop. of entire parish (1821) 1543, (1861) 1681, (1871) 1733, (1881) 1695, (1891) 1607, of whom 763 were in St Andrews and 844 in Deerness.

St Andrews-Lhanbryd, a parish containing the village of Lhanbryd in the NE of the county of Elgin and immediately E of the burgh of Elgin. It is bounded N by the parish of Drainie, NE by the parish of Urquhart, SE by the parish of Speymouth, S by the parish of Rothes, SW by the parish of Elgin, and W by the parishes of Elgin and Spynie. At the centre of the W side the boundary is formed by the river Lossie for 1½ mile below the bend at Roy's Pot; at the NW corner for ¾ mile by the SPYNE Canal; and near the SE corner for ¾ mile by one of the head-streams of the Red Burn; elsewhere the line is artificial. The shape of the parish is highly irregular. There is a compact northern portion measuring fully 5½ miles from the point where the parishes of Drainie, Urquhart, and St Andrews meet on the N to Mains of Cotts on the S, and with an average breadth of about 2 miles. From the SE corner of this a long straggling projection passes southward by Cranloch, and after narrowing to about 200 yards at Oldshields, broadens out again into the triangular portion of Teindland about 1½ by 2 miles. The extreme length of the parish, from the point already mentioned on the N, south-south-westward to the extreme southerly point at the top of Findlay Seat (861 feet), is 8½ miles; and the total area is 9359·544 acres, of which 162·983 are water. The surface is flat in the N, undulating in the centre—many of the hillocks being covered with thriving plantations—and the southern prolongation is a rough moorland, the highest point of the parish being over 1000 feet, at the SW corner of this projection. The drainage is carried off by the river Lossie, which, entering near the centre of the W side, flows first eastward and then northward through the parish in a course of about 5 miles; by the Lhanbryd or Longhill Burn, which flows along the centre, and by the Red Burn in the extreme S. In the N end of the parish is all that remains of the old Loch of SPYNE, now reduced to a portion 5 furlongs in length by 1½ in breadth; and at the point where the southern prolongation is given off is Loch-na-bo ($4 \times 1\frac{1}{2}$ furl.), and two smaller lochans beside it. The soil is a sandy loam, which is, however, fertile. About 4000 acres are under tillage, about 700 under wood, and much of the rest is waste ground. The underlying rock is mostly an impure limestone, and masses of rocks of Jurassic age are found scattered through the soil and subsoil. On the west side, N of Elgin, at Linksfield, a curious patch of rock, supposed to be of Rhætic age, was once laid bare, but the section is no longer visible. The parish is traversed across the centre for 3½ miles by the great main road from Inverness to Aberdeen, and the Forres and Keith section of the Highland railway is a little to the S of this road. Two sections of the Great North of Scotland railway system also pass through the northern and western portions of the parish. To the SE of Lhanbryd station are the remains of a stone circle, and many fine flint and stone weapons have been found at several places. The portion of the parish to the N was the chapelry of Inchbroom, that to the E was the chapelry of Lhanbryd ('the church of St Bridget'), and that to the W the chapelry of Kilmalennoc, the last two dating from Culdee times. On the rising ground on the centre of the W side, on the road from Inverness to Aberdeen, formerly stood a stone cross marking the point where Elgin Cathedral first became visible. The adjoining farm is still called Stonecrosshill. The old churches of Lhanbryd and St Andrews are gone, but the churchyards remain, the former at the village and the latter at a bend of the Lossie near Kirkhill. The tower of Coxton is separately noticed. Besides the village of

ST BOSWELLS

Lhanbryd, lying along the road from Inverness to Aberdeen near the E side of the parish, St Andrews contains also part of the burgh of ELGIN. The village, which has a station on the Highland railway, 3½ miles E of Elgin, has a number of well-built houses, the whole place having been re-arranged and laid out in 1854 under the direction of the trustees of James, second Earl of Fife. There is a post office under Elgin. The churchyard, near the centre of the village, contains one or two old monuments. There is a wool mill, and besides the industries connected with the Elgin portion—comprising an iron-foundry, large wool mills, and a saw and flour mill—there is a distillery at Linkwood on the SW, which was greatly enlarged and extended in 1875. The residences are Pitgavenny House in the N and Dunkinty House on the SW. The former—the locality of which is identified by Dr Skene with the Bothgouanan where King Duncan was killed—is a four-storey edifice, 'after a Portuguese model,' and the latter is a good building with Scottish baronial features, erected in 1876-78.

The principal landowner is the Duke of Fife. The parishes of St Andrews and Lhanbryd were united in 1780, and the conjoint parish is in the presbytery of Elgin and the synod of Moray. The church is near the centre of the parish, and the living is worth £266 a year. Under the school board St Andrews-Lhanbryd and Cranloch schools, with accommodation for 217 and 100 pupils respectively, had, in 1893, attendances of 138 and 49, and grants of £145, 18s. 2d. and £42, 2s. The latter is a combination school for the parishes of Elgin and St Andrews-Lhanbryd. Pop. (1801) 799, (1831) 1087, (1861) 1402, (1871) 1346, (1881) 1396, (1891) 1299, of whom 676 were males and 643 females. Houses (1891) inhabited 262, uninhabited 17, and being built 1.—*Ord. Surv.*, shs. 95, 85, 1876.

St Boswells, a village and a parish of NW Roxburghshire. The village of St Boswells or Lessudden stands near the right bank of the river Tweed, 1½ mile ESE of St Boswells station, and 4 miles SE of Melrose, with a post office under NEWTOWN ST BOSWELLS. A place of high antiquity, it is thought to have got its original name, Lessedwin ('manor-place of Edwin'), either from Eadwine of Northumbria (566-633) or from some yet earlier prince. It contained sixteen strong bastle houses in 1544, when it was burned by the English; and now it consists of one long street, extending north-eastward from St Boswells Green. This common, about 40 acres in extent, is the scene of a fair on 18 July, or the following Monday if the 18th falls on a Sunday. At the close of the 18th and the beginning of the 19th century, St Boswells fair was the greatest in the South of Scotland for lambs, cattle, horses, wool, and general business; and from £8000 to £10,000 changed hands in the course of the day. It was largely attended by the tinkers and potters of the Border counties. In his *History of the Gipsies* (2d ed., New York, 1878) Mr Simson describes their encampment, and states that on one occasion 'there were upwards of 300 Gipsies in the place. Part of them formed their carts, laden with earthenware, into two lines, leaving a space between them like a street. In the rear of the carts were a few tents, in which were Gipsies, sleeping in the midst of the noise and bustle of the market; and numbers of children, horses, asses, and dogs, hanging around them. . . . Any one desirous of viewing an Asiatic encampment in Scotland should visit St Boswells Green a day or two after the fair.' Water is brought to the village from Heckside reservoir by a main 3 miles long, for which a new pipe was laid in 1894 at an expense of about £500. There is one good inn, the Buccleuch Arms, situated on the Green, and much frequented during the hunting season; and at the end of the Green are the kennels of the Buccleuch foxhounds (56 couples), erected by the late Duke of Buccleuch about 1830. In the hunt the three counties of Roxburgh, Selkirk, and Berwick are scoured. Braeheads, a ridge to the N of the village, commands a most exquisite view of the ruins of Dryburgh, the winding Tweed, and the triple Eildons. Pop. (1831) 433, (1861) 447, (1871) 556, (1881) 555, (1891) 564.

The parish is bounded NE by Mertoun in Berwickshire, SE by Maxton, S by Ancrum, W and NW by Bowden, and N by Melrose. Its utmost length, from NE to SW, is $3\frac{3}{4}$ miles; its utmost breadth is 2 miles; and its area is 8203 $\frac{1}{2}$ acres, of which 43 $\frac{1}{2}$ are water. The small portion of the parish of Mertoun that adjoined this parish and is situated on the right bank of the Tweed, comprising 5 acres, was transferred by the Boundary Commissioners in 1891 to the parish of St Boswells and to the county of Roxburgh. The Tweed curves 3 miles south-eastward, north-eastward, and south-by-eastward along all the Berwickshire border, though the point where it first touches and that where it quits the parish are but $1\frac{1}{2}$ mile distant as the crow flies. It is spanned here by two suspension bridges, one erected by Lord Polwarth in 1880; and its bank on the St Boswells side is steep and wooded. The surface sinks to 200 feet above sea-level along the Tweed, and rises gently thence to 268 feet at Benrig, 326 at Hiltonhill, and 538 near Maxpoffie, thus everywhere being dominated by the EILDON HILLS (1385 feet) in the neighbouring parish of Bowden. Red sandstone, of good building quality, is the predominant rock; and the soil is variously alluvium, black loam, and stiff clay. Rather less than 200 acres are under wood; and most of the remainder is in tillage. The parish is named after Boisil, who from about 650 to 661 was successively prior and abbot of the Columban monastery of Old Melrose, and the fame of whose sanctity attracted thither the youthful St Cuthbert. Not a vestige remains of the ancient village of St Boswells, which stood near the parish church, 7 furlongs SE of Lessudden. This parish was the lifelong residence of, and has given designation to, John Younger (1785-1860), the shoemaker-fisherman-poet, who was born at Longnewton, and whose interesting Autobiography was published at Kelso in 1882. Near the village is Lessudden House, 'the small but still venerable and stately abode of the lairds of Raeburn.' Other mansions are Benrig, Elliston, Maxpoffie, Maxton Cottage, and The Holmes. St Boswells is in the presbytery of Selkirk and the synod of Merse and Teviotdale; the living is worth £328. The parish church is an old building, enlarged in 1824, and contains over 300 sittings. There is also a Free church; and the public school, with accommodation for 125 children, had (1893) an average attendance of 104, and a grant of £92, 10s. Pop. (1801) 497, (1831) 701, (1861) 865, (1871) 973, (1881) 959, (1891) 962.—*Ord. Sur.*, sh. 25, 1865.

St Catherines. See CATHERINES, ST.

St Cuthberts. See EDINBURGH.

St Cyrus, formerly Ecclesgreig, a parish, with a village of the same name, in the extreme S of the county of Kincardine. It is bounded NE by the parish of Benholm, SE by the North Sea, SW by Forfarshire, NW by the parish of Marykirk, and N by that of Garvock. Along the sea-coast the boundary is natural, as it is also at the S corner and along the SW, where, as noticed in the article on the parish of Montrose, it follows for 4 miles partly the present and partly an old course of the river North Esk. For $2\frac{1}{2}$ miles on the NW side it follows the course of the stream running along the Den of Canterland, and elsewhere it is artificial. The shape of the parish is a rectangle with irregular sides, the greatest length, from NE to SW, being 5 $\frac{1}{2}$ miles; and the average width, north-westward from the sea-coast, $2\frac{1}{2}$ miles. The area is 8718·608 acres, of which 390·561 are foreshore and 78·698 water. The surface lies on the slope from the hill of GARVOCK to the sea, and is broken up into a series of undulations running from NE to SW, attaining 486 feet at the Hill of Morphie, and 600 near Maryland in the NW corner of the parish. Almost the whole of the surface is under cultivation or woodland. The soil is everywhere a good sound loam, strong in some parts and light in others, but very fertile. It lies on a subsoil of decomposed red sandstone or volcanic rock, varying from clay to gravel. The underlying rocks are Old Red Sandstone—which is quarried at Lauriston—or interbedded volcanic strata,

which at DEN FENELLA and elsewhere contain very fine agates and other minerals. In the Den of Canterland fish remains are found in the shales constituting the upper fish bed of the Old Red Sandstone of Forfar and Kincardine. There are also, at several places, bands of limestone which are not now worked, though former quarrying operations in connection with them led, at the E corner of the sea-coast, to rather disastrous results. 'On the Kincardineshire coast,' says Sir Charles Lyell, 'an illustration was afforded, at the close of the last century, of the effect of promontories in protecting a line of low shore. The village of Mathers, 2 miles S of Johnshaven, was built on an ancient shingle beach, protected by a projecting ledge of limestone rock. This was quarried for lime to such an extent that the sea broke through, and in 1795 carried away the whole village in one night, and penetrated 150 yards inland, where it has maintained its ground ever since, the new village having been built farther inland on the new shore;' and this new hamlet had to be protected by a stone bulwark. In the SW the drainage is carried off by the North Esk and the burns of Canterland, Morphie, Dannies Den, and Commieston, which flow into it. To the E of the village is the small burn of Woodston, and in the NE end of the parish are the burns of Lauriston and Den Fenella, all flowing direct to the sea. The Esk and all the other streams flow through deep and romantic dells, the gorges of the burns of Lauriston and Den Fenella being particularly fine and well-wooded. The latter, in which there is a high waterfall, and which is spanned by a very lofty viaduct of the Montrose and Bervie railway, is separately noticed. On the North Esk is a pool known as the Ponage or Pontage Pool, which was, in the days when bridges were not, long the abode of a water-kelpie. On one occasion the monster having appeared as a horse, was caught and bridled—presumably with a witch bridle—and kept in captivity for a considerable time, during which he was employed in drawing stones to Morphie for a castle that was then being erected, but of which only the site now remains. A servant having, however, incautiously removed the bridle to allow him to get some food, the kelpie immediately vanished through the wall laughing with joy, and calling out:

'Sair back and sair banes,
Carrying the laird o' Morphie's stanes.
The laird o' Morphie canna thrive
As lang's the kelpie is alive!'

a rhyme which he used often afterwards to repeat as he showed himself in the pool, a circumstance that has been turned to advantage in the local poem of *John o' Arnha*. The coast is mostly low and sandy, though at several points there are rocky promontories. From the centre of the coast-line south-westward to the mouth of the North Esk there is a stretch of sandhills, bounded on the NW by an old line of cliff, in some places from 150 to 200 feet high, but gradually becoming lower as it approaches the North Esk. The view from this across towards the Red Head and away beyond by the Isle of May towards the Firth of Forth is very fine. In 1858 a cave of considerable size, with many bones and heaps of edible shells lying along the floor, was discovered in these cliffs about half a mile from the North Esk, but was shortly afterwards rendered inaccessible by a fall of rock at the mouth. Near the river, in the stackyard of the farm of Stone of Morphie, is a solitary standing-stone, but nothing is known as to its history. It is traditionally connected with the Danes, and said to have been erected to mark the grave of one of their leaders—Canus—who was killed here, and whose memory is also preserved in the name of the neighbouring farm of Commieston, while the Danes themselves give name to Dannies (Dane's) Den. Several stone coffins have been found in the neighbourhood, but defeated armies have seldom time to bury their dead in stone coffins, much less erect memorial stones. Amid the sandhills, near the centre of the base of the line of inland cliff already described, is the small parish burying-ground

ST CYRUS

known as the Nether Kirkyard. It was probably the site of the old Culdee church from which the parish derives its name, Ecclesgreig being 'the church of Grig.' This Grig or Giric or Curig, whom Chalmers describes as Mormaer of the tract of country between the Dee and Spey, but who in reality was associated in the government of the kingdom of Scone with Eocha, who was the grandson of Kenneth mac Alpin, reigned from 878 to 889. As guardian to a king whose succession was disputed, and who was a Briton of Strathclyde, he seems to have tried to win over the clergy of the Scottish Church by freeing them from all secular exactions and services. In the Pictish Chronicle his name appears as Cricius, and as he seems to have been named after St Cyr or Cricius, a martyr of Tarsus, the church was dedicated in honour of that saint, and hence the name St Cyrus. The church of 'Saint Cricius of Ecclesgreig' was given to the priory of St Andrews by Bishop Richard (1163-77), and the grant was confirmed by King William the Lion. The adjacent estate is still called Kirkside, and the old name is preserved in connection with Ecclesgreig House, the former name of which was Mount Cyrus. The church remained that of the parish till 1632, when a new one was erected on the site of the present building. A dependent chapel dedicated to St Laurence was at Chapelfield, $\frac{1}{2}$ mile N of Lauriston House. At the point of Milton Ness, $\frac{1}{4}$ mile E of the village, are the remains of an old castle called the Kaim of Mathers, said to have been built by Barclay of Mathers as a place of refuge from the vengeance of the law, by which he was threatened for his share in the slaughter of Sir John Melville. (See GARVOCK.) In October 1715 a band of Jacobites from Farnell and Kincaid placed an Episcopal clergyman in possession of the church and refused the minister admission, nor did he preach again till the 5th February 1716, when 'the rebels having all passed by this church,' he 'repossessed himself of his pulpit; but on this and the two following Sundays he had but a small congregation, the people not being able to leave their houses for fear of finding them plundered before their return by the Swiss and Dutch soldiers who were in the neighbourhood.' The principal mansions are Lauriston and Ecclesgreig. The former is separately noticed, and the latter is the residence of F. G. Forsyth-Grant, Esq. Lauriston was long in possession of the family of Stratton, one of whom was 'the stalwart laird of Lawriestoun' who 'was slain into his armour scheen' at the battle of Harlaw. A later laird, George Stratton, was one of the early Reformers. His brother David was burnt for heresy at Greenside in Edinburgh in 1534, and his son, Sir Alexander, was moderator of the General Assembly held at Aberdeen in 1605. The last of the family was Sir Joseph M. Stratton of Kirkside, K.C.B., a Peninsular and Waterloo hero, who died in 1846, and is buried in the Nether Kirkyard. In the SE corner of the same burying-ground is also interred George Beattie (1786-1823), a lawyer in Montrose, and the author of *John o' Arnha* and other poems of some local celebrity, who was a native of the parish. In a fit of despair at being jilted by a Miss Gibson, daughter of the then farmer at Stone of Morphee, he committed suicide close to the spot where now stands the tombstone erected to his memory 'by the friends who loved him in life and lamented him in death.' Another distinguished native is David Herd (1732-1810), editor of the first classical collection of Scottish songs and ballads—*Ancient and Modern Scottish Songs and Heroic Ballads* (Edinb. 1769-74). The Rev. Alexander Keith, D.D. (1791-1880), the writer on prophecy, was minister from 1816 till 1840. The village stands on high ground overlooking the sea near the middle of the coast of the parish. It has a post office under Montrose, and near it is the battery in connection with the St Cyrus company of the Forfar and Kincardine Artillery Volunteers. The parish is traversed near the coast by the main line of road from Dundee by Montrose to Aberdeen, which crosses the North Esk by a good stone bridge erected in 1775-80; and parallel to this road and between it and the sea is the Montrose

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and Bervie section of the North British railway system, with stations at the North Esk, at the village of St Cyrus, and at Lauriston, $\frac{3}{4}$, $\frac{5}{8}$, and $\frac{6}{8}$ miles respectively N of Montrose. There are also a large number of very good district roads. The only industries are farming, and operations connected with the quarry already mentioned and with the valuable salmon fishings along the coast and in the North Esk.

St Cyrus is in the presbytery of Fordoun and synod of Angus and Mearns, and the living is worth £269 a year. The parish church, at the village, built in 1853-54, is a good building with a tall spire. It was enlarged in 1891. There is also a Free church, built in 1844. Under the School Board the St Cyrus and Shortside schools, with accommodation for 251 and 65 pupils respectively, had in 1893 attendances of 149 and 39, and grants of £154, 11s. and £30, 19s. 6d. The principal landowners are D. S. Porteous of Lauriston, and F. G. Forsyth-Grant of Ecclesgreig. Valuation (1856) £12,809, (1885) £17,614, 13s. 1d., (1898) £15,295, 15s. 4d., plus £1803 for the railway. Pop. (1755) 1271, (1801) 1622, (1831) 1598, (1861) 1552, (1871) 1585, (1881) 1487, (1891) 1327, of whom 654 were males and 673 females. Houses (1891) inhabited 311, and uninhabited 42.—*Ord. Sur.*, sh. 57, 1868.

St Fergus, a village and a coast parish of Buchan, NE Aberdeenshire. The village lies 1 mile inland, and 5 miles NNW of Peterhead, under which it has a post and telegraph office. The parish is bounded NW and N by Crimond, E by the German Ocean, S by Peterhead, and SW by Longside and Lomnay. Until 1891 forming a detached part of Banffshire, the entire parish was then transferred by the Boundary Commissioners to Aberdeenshire. Its utmost length, from NNW to SSE, is 6½ miles; its breadth varies between 3 furlongs and 4 miles; and its area is 9180½ acres, of which 285 are foreshore and 39½ water. The low flat shore, 6½ miles in extent, is bordered landward by a natural rampart of clay and sand hills, which, rising in places to 50 feet above sea-level, and thickly covered with bent-grass, protect the interior from encroachments of drifting sand. Extending along the coast for several miles, but of unequal breadth, within this ridge, is ground called the Links of St Fergus, constituting probably one of the pleasantest plains in Scotland, and producing—from its wild thyme, white clover, and short grass, it is thought—mutton of peculiar delicacy and fineness of flavour. Along the shore is an inexhaustible quantity of shells, which have been advantageously used as manure. The river Ugie winds 4 miles east-south-eastward along all the Peterhead boundary to its mouth in the German Ocean; and its feeder, the Burn of Ednie, runs 3½ miles south-south-eastward along all the south-western border. A canal, which was cut near the Ugie towards the close of the 18th century, has long been entirely useless except for supplying water to a few farms. The surface exhibits a beautiful succession of rising-grounds and valleys; but there is no hill, the highest point (164 feet) being 2 miles WNW of the village. The rocks comprise granite, gneiss, trap, quartz, and crystalline limestone. The soil of the seaboard district is sandy loam and moss, of the middle district a strong adhesive clay, and of the western district reclaimed moor and moss. Fully four-fifths of the entire land area are in tillage, and barely 30 acres are under wood, while the rest is pasture, links, moss, etc. INVERUGIE Castle, which is noticed separately, was the birth-place of the great Field-Marshal Keith (1696-1758). (See PETERHEAD.) The name of the parish was Inverugie, or occasionally Langley, till 1616, when it was changed to St Fergus, most likely after the ancient patron saint, an Irish bishop of the Roman party, who built a basilica here in the first half of the 8th century. St Fergus is in the presbytery of Deer and the synod of Aberdeen; the living is worth £283. The parish church, built in 1869, contains 658 sittings. There are also a Free church and a Baptist chapel (1810); and two public schools—the Central and the North—with respective

accommodation for 175 and 101 children, had (1893) an average attendance of 138 and 73, and grants of £131, 4s. 6d. and £68, 17s. Pop. (1801) 1270, (1831) 1334, (1861) 1608, (1871) 1633, (1881) 1527, (1891) 1318.—*Ord. Sur.*, sh. 87, 1876.

St Fillans. See FILLANS, ST.

St Germains, a plain mansion in Tranent parish, Haddingtonshire, 2 miles NE of Tranent town and 2½ SW of Longniddry station. It was built towards the close of the 18th century by David Anderson, Esq., at one time secretary to Warren Hastings; and by his descendant it was sold a few years ago to the trustees of the late Charles Stewart Parker Tennent, Esq. of Wellpark, Glasgow, the present proprietor being A. Hay Tennent, Esq. The Knights Hospitallers here had an establishment, founded in the 12th century.—*Ord. Sur.*, sh. 33, 1863. See Jn. Small's *Castles and Mansions of the Lothians* (Edinb. 1833).

St Kilda, called anciently and by the natives Hirta or Hirt (Gael. *Iorta*), is the chief islet of a rocky group included among the Hebrides, though lying far out in the Atlantic, and quite detached from these islands. Situated in N lat. 57° 48' 35", and W long. 8° 35' 30", St Kilda is nominally included in the parish of Harris in Inverness-shire. It lies 40 miles almost due W of Griminish Point, the NW extremity of North Uist, and about 76 nautical miles NW of Dunvegan in the isle of Skye. It measures 3 miles from E to W, 2 from N to S, and about 7 in circumference; and its area is 1200 acres, or 1·9 square mile. In shape it resembles a roughly formed stunted letter H, sloping NW and SE; and its coasts are faced with lofty precipitous cliffs, rising sheer out of deep water, at nearly all points except the landing place in the SE, or village bay. In the NW bay also, the cliffs are lower, and in favourable weather a landing may sometimes be effected there. The other islets of the group are uninhabited; but serve as grazing ground for the St Kildans' sheep, and a breeding place for myriads of sea-fowl. They are the following—The Dune, a precipitous and jagged peaked islet forming the southern horn of the village bay, and only separated from St Kilda by a narrow passage of sea; Soa, or the Sheep Island (1031 feet), divided from the NW extremity of St Kilda by a strait 400 yards across, in which rise 3 lofty needle rocks, or 'stacks'; Borrera (1072 feet) between Stack-an-Armin and Stack Lü, 3½ miles towards the N; and Levenish (200 feet), a small rocky islet, 1½ mile SE of the Dune. The prevailing feature of all these islands is the precipitous nature of the cliffs of which they are composed; but apart from their picturesque aspect, they are entirely subsidiary to the inhabited island in interest. Between the bays at either end of St Kilda rises a high rocky ridge, forming the main body of the island, and rising into the four principal summits or 'tops' of Conagher (1220 feet), Mullach-seal, Mullach-gael, and Mullach-ostervael or oshival. The sides of these descend sheer into deep water; and the precipice of Conagher is said to be the deepest perpendicular precipice in Great Britain. There are several small streamlets flowing from the high lands; and among the wells and springs are St Kilda's Well and the Well of Virtues.

The climate is on the whole mild, as might be inferred from its situation, though sometimes damp mists, severe frosts, heavy snowstorms, and tempestuous winds fall upon the little community. No trees or shrubs grow on the island; but the grass is plentiful and nutritious as pasture. The only wild animal is the mouse; but the islets swarm with myriads of sea-fowl—fulmars, puffins, guillemots, razor-bills, and solan geese,—which annually supply the islanders with great part of their wealth. The last-named birds do not breed on St Kilda, but only on the smaller islets, and chiefly on the detached 'stacks' near Borrera. The geologic formation of St Kilda has not been scientifically determined, but Mr Sands says that the hills for several hundred feet are formed of sandstone, above which cliffs of igneous rock, trap, granite, etc., are found. The cultivated soil, though black, yields now a somewhat

poor return to the labour spent upon it by the industrious natives; but visitors are generally impressed with the brilliant verdure of the pastures and hills. The husbandry was long of the most primitive description, the *caschrom* or spade-plough being used up till 1830; but more modern implements have now been introduced into the island, and the people show much industry in fencing their fields and preparing the soil. In 1758 about 80 acres were estimated to be under tillage, and barley was the chief crop. Now only about half that area is in cultivation; and the chief crops are potatoes, oats, and bere. A few turnips and cabbages are also grown. A curious agricultural feature on the islands is formed by the *cleits* or *clactyan*, little pyramidal huts of dry-stones, 8 to 10 feet in diameter, and 4 to 5 high, used formerly to dry the sea-birds before salt was introduced, but now to protect the crops when cut. These are very numerous, though the estimate of 5000 supplied to one visitor is certainly exaggerated. The pasturage is sufficient and good in summer; but the sheep receive little attention from their owners. At the end of the 17th century there were about 2000 sheep on the group, in 1841 about the same, in 1861 about 1500, in 1877 between 1000 and 1200, and in 1886 about 1000. The sheep are of the old St Kilda breed, and others are of the black-faced variety. The islanders sell neither the sheep nor the wool, the latter being woven into blanketing and tweed. The number of sheep possessed by each crofter varies from 10 or 12 to about 150. The mutton is good; and the wool, which is *plucked* from the sheep, not shorn, is generally of a light dun colour. The number of cattle on the island in 1886 was 40, of the West Highland breed, mostly black or red and black. The young cattle are annually purchased by the landlord, who removes them from the island. There are now no horses on St Kilda, though in 1697 there were 18, and in 1841, 3 or 4. They are said to have been shipped away by a former lessee of the island, on the ground that they injured the grass. There is an imported breed of mongrel collie dogs, used in catching puffins, every crofter having two or three, there being 40 in all. Cats are plentiful, and so are mice, while rats are unknown. Hens are few in number, doubtless because eggs are otherwise obtained in abundance. In 1886 there were 22 families on the island. Of these, 16 families, as crofters, with as many crofters' houses, paid each £2 per annum for their holdings, while the rest of the inhabitants ranked as cottars. In 1815 the rental of the island was worth about £40; in 1841, £60; and in 1886, also £60. Rent is paid for the common pasture of the island. Formerly the islanders paid each year on a fixed number of sheep and cattle, but the charge for grazing each cow is now 7s. yearly, and for sheep 9d. each. The rents are paid in kind; feathers, oil, cloth, cheese, cattle, tallow, and ling being the chief articles exported. Although the surrounding seas abound with fish, fishing is rather neglected by the St Kildans. They are shy of fish-diet, asserting that it produces an eruption on the skin. The capture of sea-fowl is the chief occupation of the islanders. The men are bold and expert cragmen; suspended only by slender ropes, they fearlessly explore the perpendicular cliffs of their island. They divide the rocks where the fulmars build into 16 portions. These are allocated by lot among the 16 crofters, each of whom looks after his own portion. The captured birds are then equally divided among their captors, salted, and preserved for winter. The fulmars are valuable for the sake of the oil the young birds have in their stomachs, and the other gulls for their feathers. The women employ themselves in catching puffins on the adjacent islands in the season; and immense numbers of birds are annually killed, without causing any appreciable lessening of the numbers that hover about the islands. The only manufacture is that of coarse tweed and blanketing from the wool of the sheep. The women spin the thread and dye it; while the men weave it into cloth; and, moreover, make all the garments required of it, both for themselves and for the

ST KILDA

women. The men thus follow five or six different callings—of crofter, cragsman, fisherman, weaver, tailor, and cobbler.

There is but one village on St Kilda, situated at the head of the E bay, on comparatively level ground at the foot of steep and lofty hills. It contains a church, a manse, a factor's house, a store, 14 zinc-roofed and 2 thatched cottages arranged in a crescent, and standing from 15 to 20 yards apart from each other. The zinc-roofed cottages were built in 1861-62 by the late proprietor after a severe storm had unroofed the former primitive hovels, many of which still stand, and are used as byres or cellars. The church, a plain and substantial building with four windows, a slated roof, but an earthen floor, cost £600. The manse, the factor's house (used only for a few days in the year), and the storehouse are all slated houses. The little burial-place behind the village is walled, and the gate is kept closed; but the interior is as neglected as most Highland cemeteries. The St Kildans are exceedingly primitive in their habits, but they are more intelligent than their isolation would promise. They are for the most part fair-complexioned, but some are swarthy; and though inclined to be stout, they are active and hardy. The women are comely; some are said to be beautiful. The average height of the male inhabitants is 5 feet 6 inches. They are a very prolific race, but the new-born infants are peculiarly liable to be fatally seized with *tetanus infantum*, from a cause never satisfactorily explained, but the malady is known to have existed for more than a century, one-half of the infants of the island dying of it. When once past the dangerous age the children are healthy and strong. Both the juvenile and adult inhabitants are liable to a feverish cold, which they call 'the boat-cold,' because they believe it attacks the island whenever a boat from the outer world touches on their shores. Imbecility is almost unknown. Though nearly all can read the Gaelic Testament, only a few can write in the vernacular, and none speak English. The St Kilda music was formerly famous among the Hebrides; but the inhabitants are not now specially musical. Their morality is good; crime is unknown; and they adhere to the somewhat rigid piety of two generations ago. The entire population belongs to the Free Church, whose minister, when there is one, acts as schoolmaster. The dress of the inhabitants resembles the ordinary lowland costume in Scotland; the kilt is not worn even by children. The food is chiefly sea-fowl, mutton, milk, and eggs. There are only five surnames now known on the island, viz., Gillies, Macdonald, Ferguson, Mackinnon, and Macqueen. The population in 1697 was said to be 180; in 1758, 88; in 1795, 85; in 1815, 103; and in 1841, 105. The first government census took place only in 1851, and returned the population at 110; in 1861 it was 78; in 1871, 71; in 1881, 77; and in 1891, 71, of whom 39 were females. In 1856, 36 inhabitants emigrated to Australia.

St Kilda is the property of MacLeod of MacLeod, who purchased it for £5000 in 1871. It has, however, been for centuries in the MacLeod family. Lord Dunmore, proprietor of South Harris, is the feudal superior of the island, and is entitled to receive an annual feuduty of one shilling. The intercourse of St Kilda with the outer world is maintained by means of the factor's boat, which visits it three times a year, but excursions are made from Glasgow and Oban two or three times in the course of the summer.

The old name of the island appears in the forms Hirt, Hirth, Hirta, and Hyrtha, and is referred to the Gaelic *h-Iar-tìr*, 'the west country.' The inhabitants have a proverb, 'Hirst to Perst' (Perth), indicating their distance from the centre of the kingdom. The name St Kilda is probably connected with the Culdees, as the shadowy chronicler Gildas does not usually figure as a saint, and no more authentic representative of the name is found in history. Hirt appears in a charter of the 14th century by which the island and other lands are granted by John, Lord of the Isles, to his son Reginald. It is confirmed by Robert II. The island next passed

ST LEONARDS

to Macdonald of Sleat, and later to the MacLeods of Dunvegan, who have held it for three centuries. James Boswell at one time thought of buying St Kilda. In 1615 it was invaded and ravaged by 'Colkitto,' in 1724 it was depopulated by smallpox, only 4 adults being left alive to support 26 children; from 1734 to 1742 Lady Grange was confined to the island by her cruel and powerful husband Lord Grange, and tales of her sojourn still linger among the people.

In 1697 three chapels are said to have existed on the island, and were dedicated to Christ, Columba, and St Brendan. The only relic of these is a stone, marked with a cross, built into one of the houses. In the Glen Mhor or Amazon's Valley, at the head of the N bay, there stood a pyramidal stone hut called the Female Warrior's house—a lady who is said to have hunted from St Kilda to Harris, at a time when the sea did not flow between them. On Borrera is a dome-roofed hut called the Stallir House, and related to have been the abode of a hermit; and on the Dune are the remains of an ancient fort. Subterranean dwellings, stone implements, and pottery have also been found.

The unique and romantic situation of St Kilda have, from comparatively early times, attracted a good deal of interest to the lonely little island. Sir Walter Scott notices it in his *Lord of the Isles* (Canto i., st. 8); and David Mallet makes it the scene of his poem *Amyntor and Theodora*; or, *The Hermit*. Lord Brougham visited it in 1799.

Notices of the island occur in Fordun, Boethius, Buchanan, Camden, Sir Robert Murray, and others. Books on the subject are Martin's *Late Voyage to St Kilda*, 1698, and his *Description of the Western Islands of Scotland*, 1703; Buchan's *Description of St Kilda*, 1741 and 1773; Rev. Kenneth Macaulay's *Voyage to and History of St Kilda*, 1764; Rev. John Lane Buchanan's *Travels in the Western Hebrides*, 1793; Dr John MacCulloch's *Description of the Western Islands of Scotland*, 1819, and his *Highlands and Western Islands*, 4 vols., 1824; L. MacLean's *Sketches of the Island of St Kilda*, 1838; J. Sands' *Out of the World; or, Life in St Kilda*, 1876 and 1877; MacDiarmid's 'St Kilda and its Inhabitants' in *Trans. Highl. and Ag. Soc.*, 1878; Geo. Seton's *St Kilda, Past and Present*, 1878; and Connell's *St Kilda and the St Kildians* (1886). Besides these a large number of magazine articles, etc., on the subject are detailed in Poole's *Index to Periodical Literature*.

St Leonards, a mansion, in the SE vicinity of Edinburgh, near the south-western base of Arthur's Seat, and 1½ mile SSE of the General Post Office. Surrounded by grounds 12 acres in extent, it is a lofty Scottish Baronial edifice, erected in 1869-70 from designs by Mr John Lessels.

St Leonards, a parish within the burgh of St Andrews, and forming practically part of the parish of St Andrews, E of Fife, though it is civilly and ecclesiastically distinct. It consisted formerly of a main portion, at Kenly, near the centre of the S border of St Andrews parish, and three detached portions situated respectively at Fisher's School, the Old College of St Leonards, and Rathelipie—the first two detached portions lying within the burgh of St Andrews. The Boundary Commissioners in 1891 transferred the Kenly portion, the Rathelipie portion, and a small part of the Old College portion to St Andrews parish in exchange for a part of the territory of the latter. An almost new parish of St Leonards was thus formed, which is now situated wholly within the burgh of St Andrews. The physical characteristics are the same as in St Andrews, and the height above sea-level rises towards the S till 317 feet is reached near the corner of Balcaithly Wood. Although the principal of St Leonard's College did not always officiate as the minister of the parish, and in the case of George Buchanan (1566-70) was not even a clergyman, it is certain that for some time before the Revolution the two offices were held by the same person; and from that time till 1836, first the principal of St Leonards, and thereafter of the United College of St

ST MADDOES

Salvator and St Leonard, was always a clergyman and minister of this parish. St Leonards is in the presbytery of St Andrews and the synod of Fife, and the living is worth £313 a year. The chapel of St Salvator's College has been used as the parish church since the latter half of the 18th century, and was legally annexed to the parish in 1843. Pop. (1801) 363, (1831) 482, (1861) 513, (1871) 741, (1881) 769, (1891) 1217, of whom 706 were females.—*Ord. Sur.*, shs. 49, 41, 1865-57.

St Maddoes, a small parish at the W end of the Carse of Gowrie, Perthshire, adjoining, at its north-western boundary, GLENCARSE station on the Perth and Dundee section of the Caledonian railway, 15½ miles WSW of Dundee and 6 E by S of the post-town, Perth. It is bounded W and NW by Kinfauns, NE by Errol, and S by the Firth of Tay. In 1891 the eastern portion of the INCHYRA detached part of Kinnoull parish was transferred by the Boundary Commissioners to St Maddoes. Its utmost length, from N to S, is 1½ mile; and its utmost breadth, from E to W, is 1½ mile. The Firth of Tay, which curves along the southern border for about 2 miles, broadens eastward from ¾ to 1 mile, but at its widest is divided by Magdram island into the North and the South Deep. The shore is fringed by three old sea-margins, 3, 9, and 14 feet above the level of the Tay; and, beyond, the surface rises gently to a maximum altitude of 71 feet near Dumbgreen. Old Red Sandstone is the predominant rock, and has been quarried at Cottown. The soil, a deep strong clay near the Tay, on the higher grounds is a rich brown loam. Excepting about 30 acres of plantation, 76 of permanent pasture, and 68 in the policy of Pitfour Castle, the entire area is constantly in tillage. A large brick and drain-pipe work employs a great number of people. Near the eastern boundary is the 'Hawk's Stane' referred to under LUNCARTY; in the Pitfour policy are remains of a stone circle, with cup-markings; and in the churchyard is an elaborately sculptured stone, 7 feet long and 2½ to 3 feet broad. Alexander Lindsay, Bishop of Dunkeld, was minister from 1591 till his death in 1639. PITFOUR CASTLE, noticed separately, is the only mansion; and Sir J. T. Stewart-Richardson, Bart., is almost the sole proprietor. St Maddoes is in the presbytery of Perth and the synod of Perth and Stirling; the living is worth £286, with manse. The parish church, near Glencarse station, was built in 1798, and contains about 400 sittings. The public school, with accommodation for 120 children, had (1893) an average attendance of 77, and a grant of £63, 11s. Valuation (1885) £5297, 13s. 10d., (1892) £5715, 18s. 10d. Pop. (1801) 295, (1831) 327, (1861) 280, (1871) 290, (1881) 316, (1891) 420.—*Ord. Sur.*, sh. 48, 1868.

St Magnus Bay, a spacious bay on the W coast of the mainland of Shetland. It measures 12½ miles across the entrance, expands to 14 miles, and indents the land to a depth of 13½ miles. It enters between the headlands of Esha Ness on the N and the Ness of Melby on the S; but has in its mouth, 1 mile from the latter, the island of Papa-Stour; so that it is reduced at the entrance to an open channel only 9½ miles broad. Around its inner verge are the islets of Vemantry, Meikle Roe, Papa Little, and Linga, besides various holms and skerries; and projecting from it into the land are various bays or voes, which contain safe and excellent anchorage for any number of vessels of any burden—particularly Ura Firth, Olna Firth Voe, Gon Firth, and Aith Voe.

St Margaret's Hope, a harbour and a post-office village in the island of South Ronaldshay, Orkney. The harbour is a small bay, projecting into the middle of the N coast of the island, and opening into the sound which separates South Ronaldshay from Burray. It is one of the safest and best harbours for small vessels in the kingdom. A fishery here, which drew regular visits from London lobster smacks, and engaged the capital of different English companies, was for many years the only regular fishery in Orkney. The village, standing at the head of the harbour, 13 miles S of Kirkwall, is

ST MARY'S ISLE

the seat of an industrious population, chiefly engaged in fisheries. Its post office has money order, savings bank, and telegraph departments, and there are a branch of the Union Bank and a good inn. Pop. (1861) 260, (1871) 363, (1881) 412, (1891) 404.

St Martins, a parish in the Strathmore district of Perthshire, containing Guildtown village, 6 miles N by E of Perth, under which it has a post office. Since the close of the 17th century it has comprised the ancient parish of Cambusmichael; and it is bounded N by Cargill, NE by Collace, SE by Kilspondie, S by Scone, W by Redgorton, and NW by Auchtergaven. Its utmost length, from W by N to E by S, is 5 miles; its utmost breadth is 3 miles; and its area is 7018 acres. This includes 453 acres that were transferred by the Boundary Commissioners in 1891 from the parish of Kinnoull, being the BALBEGGIE detached part of that parish. The TAY, here a splendid salmon river, curves 2½ miles south-south-westward along all the Auchtergaven and Redgorton boundary, and past the village of Stanley. Beside it the surface declines to less than 200 feet above sea-level; and thence it rises to 239 feet near Guildtown, 453 near Newlands, 413 near Cairnbeddie, 397 near Rosemont, and 424 near East Melgich. Thus, although neither flat nor hilly, it rises considerably above the Tay, and is much diversified by depressions and rising-grounds. Plantations are extensive enough to give a warm appearance to the interior; and copse-woods fringe the margin of the river. The soil in general is a black mould, incumbent on till, and much improved by art; whilst towards the river it is naturally good and fertile. Freestone abounds, and has been largely quarried. Limestone and rock-marl also occur. One still may trace a Roman road leading north-north-eastward from the ancient Bertha towards the parish of Cargill. There are vestiges of several stone-circles; and one most interesting antiquity has been noticed in our article CAIRNBEDDIE. The church of St Martins anciently lay within the diocese of Dunkeld, and was a mensal church of the abbey of Holyrood. The church of Cambusmichael—still indicated by its ruins beside the Tay, on a low plain of the class which Gaelic calls *cambus*—was included in the diocese of St Andrews, and belonged to the abbacy of Scone. The principal mansion, St Martins Abbey, 5 miles NNE of Perth, belongs to the trustees of the late William Macdonald Macdonald, Esq., the only son of General Farquharson, and who claimed the chieftainship of the Colquhouns. The estate, originally called the Kirklads, was purchased by Wm. Macdonald, W.S., of Ranachan (1732-1814), a founder of the Highland and Agricultural Society; and by him the mansion was erected towards the close of the 18th century. A massive and commodious building, it was greatly enlarged and adorned by the late proprietor; and its beautiful grounds and policies were planned and laid out about 1858 by Mr Craiggie-Halket, the celebrated landscape gardener. In Sept. 1884 Mr Gladstone visited the late Sir Andrew Clark, Bart., M.D., his physician, at St Martins Abbey. (See chap. xlii. of T. Hunter's *Woods and Estates of Perthshire*, Perth, 1883.) St Martins is in the presbytery of Perth and the synod of Perth and Stirling; the living is worth £234. The parish church is a handsome and commodious edifice of 1842. Guildtown and Balbeggie public schools, with accommodation for 106 and 120 children had (1893) an average attendance of 84 and 72, and grants of £82, 10s. and £73, 6s. 6d. Valuation (1885) £8764, 13s. 5d., (1892) £8402, 14s. Pop. (1801) 1136, (1831) 1135, (1861) 904, (1871) 735, (1881) 741, (1891) 871.—*Ord. Sur.*, sh. 48, 1868.

St Mary's. See RONALDSHAY, SOUTH.

St Mary's Holm, a place on the S coast of Holm parish, Orkney, 7 miles S by E of Kirkwall, under which it has a post office, with money order, savings bank, and telegraph departments.

St Mary's Isle, the seat of the late Earl of Selkirk, in Kirkcudbright parish, Kirkcudbrightshire, 1½ mile SSW of the town, from which it is approached by a long lime-tree avenue. It stands on a finely-wooded peninsula,

ST MARY'S ISLE

projecting $1\frac{1}{2}$ mile south-south-westward into the head of Kirkcudbright Bay, and 1 to 3 furlongs broad. The retreat of the sea, so noticeable along the whole coast of Kirkcudbrightshire, is peculiarly observable in this peninsula. The sea in former times made the place literally an isle, and covered at every tide at least one-half of its present cultivated surface. The W side is high ground, defended by a border of rocks; but the E side visibly discloses from end to end, in large shell-banks, the former line of high water. The house, a rambling, old-fashioned building, with grounds of singular beauty, occupies the site of a priory founded about 1129 by Fergus, Lord of Galloway. The original name of the island was Trahil or Trayl, and the priory was dedicated to the Virgin Mary, whence we find it designated 'Prioratus Sanctæ Mariæ de Trayll.' It was the seat of canons-regular of the order of St Augustine, and being given by its founder to the abbey of Holyrood, became a dependent cell of that establishment. The prior was a lord of parliament. The priory was surrounded with high walls, which enclosed an extensive area. The outer gate was distant at least $\frac{1}{2}$ mile from the priory, and stood at a place still called the Great Cross. The inner gate led immediately to a group of cells, the habitations of the monks, and was called the Little Cross. All the buildings were swept away towards the close of the 17th century, to give full scope for beautifying the ground as a noble demesne. Towards the close of the following century, while the Earl of Selkirk was extending his garden, 14 human skeletons were discovered by the workmen, placed regularly alongside of one another with their feet to the E, occupying a spot quite different from the burying-ground of the monks, and all the remains possibly of persons interred previous to the existence of the priory. David Panther, or Paniter, was prior of St Mary's Isle, and afterwards commendator of CAMBUSKENNETH. He was one of the most eminent literary men of his day, and wrote letters, published by Ruddiman in 1772, which afford a model of classical Latinity. According, however, to Buchanan, he was a profane man, and instigated persons at court to all manner of impurities; whilst Knox says that 'eating and drinking was the pastime of his lyif.' He died at Stirling on 1 Oct. 1558. Robert Richardson, descended from a line of respectable citizens of Edinburgh, and previously promoted to the offices of lord-treasurer and general of the mint, was made commendator of St Mary's Isle in 1558; and he was so adroit as to hold all his lucrative situations under both Mary and her son. Large estates were purchased by him, and at his death, in 1571, were left to his two sons, Sir James Richardson of Smeaton, and Sir Robert Richardson of Pencaitland. On 22 April 1778 the famous Paul Jones, whose father had been gardener at Arbigland, in the parish of Kirkbean, made a descent on St Mary's Isle, with the view of seizing the Earl of Selkirk as a hostage during the war with America. His lordship being from home, all the silver plate in his mansion was seized and carried off to France, but was returned uninjured and without cost seven years after the depredation. The plate was returned at the instigation, it is said, of Dr Benjamin Franklin, who was then at Paris as representative of the American Government, and who, on the arrival of Jones at Brest with his ship, sent him a severe reprimand for piracy, and a peremptory order to send the plate at once to him that he might return it to the Earl of Selkirk. In consequence of the war, however, it was 1785 before it was received back again at St Mary's Isle, when it was found just as it had been when carried off, the tea-leaves even being still in the teapot. All the correspondence regarding this incident, it may be mentioned, has been preserved at St Mary's Isle. Lord William Douglas (1634-94), eldest son, by a second marriage, of the first Marquess of DOUGLAS, was created Earl of Selkirk in 1646. He married Anne, Duchess of HAMILTON, and in 1660 obtained the title of third Duke of Hamilton, at the same time resigning the earldom of Selkirk, which, however, by a new patent of 1688 was conferred on his second son. On the death

ST MARY'S LOCH

of Dunbar James Douglas, the sixth Earl (1809-85), the title reverted to the Duke of Hamilton, and the estate went to Captain John Hope, son of a sister of the earl. —*Ord. Sur.*, sh. 5, 1857.

St Mary's Loch, a beautiful lake in the west of Selkirkshire, $15\frac{1}{2}$ miles WSW of Selkirk, 14 SSW of Innerleithen, and $15\frac{1}{2}$ NE of Moffat. Lying 814 feet above sea-level, and 80 to 90 feet deep, it extends 3 miles north-by-eastward and north-eastward, and has a maximum breadth of exactly $\frac{1}{2}$ mile. At its head is the smaller Loch of LOWES; MEGGET Water and KIRKSTEAD Burn are the chief of eight streams that enter it; and YARROW Water issues from its foot. On either side the smooth green hills rise steeply—to the SE, BOWER-HOPE Law (1570 feet), the Wiss (1932), and Peat Law (1737); to the NW, Watch Hill (1710), Bridgend Hill (1594), Copper Law (1690), Henderland Hill (1740), and DEER LAW (2065). Its waters are well stocked with trout of $\frac{1}{2}$ lb. each on an average; and pike and perch are also taken, with an occasional salmon and bull-trout. Scott, in his introduction to canto second of *Marmion*, has drawn a perfect picture of the scenery:—

'Oft in my mind such thoughts awake
By lone St Mary's silent lake.
Thou know'st it well,—nor fen, nor seedge,
Pollute the pure lake's crystal edge;
Abrupt and sheer, the mountains sink
At once upon the level brink;
And just a trace of silver sand
Marks where the water meets the land.
Far in the mirror bright and blue
Each hill's huge outline you may view,
Shaggy with heath, but lonely, bare,
Nor tree, nor bush, nor brake is there,
Save where, of land, yon slender line
Bears thwart the lake the scattered pine.
Nor thicket, dell, nor copse you spy
Where living thing concealed might lie;
Nor point, retiring, hides a dell,
Where swain, or woodman lone, might dwell;
There's nothing left to Fancy's guess,—
You see that all is loneliness:
And silence aids,—though the steep hills
Send to the lake a thousand rills;
In summer-tide so soft they weep,
The sound but lulls the ear asleep;
Your horse's hoof-tread sounds too rude—
So stillly is the solitude.'

Yet, as in Wordsworth's day—

'The swan on still St Mary's Lake
Floats double, swan and shadow';

and yet, like Wordsworth, we may fancy that—

'Throughout her depths, St Mary's Lake
Is visibly delighted;
For not a feature of those hills
Is in the mirror slighted.'

The road from Peebles and Innerleithen to St Mary's Loch passes through a wild mountain defile, which opens on the vale of the Yarrow about 3 miles from the lake. On emerging from this, the lonely Yarrow bursts all at once on the traveller's view; and he looks on the mountains dotted with sheep, and ALTRIVE, the cottage of Hogg, the Etrick Shepherd, which stands a little way E of the lake, and which, more than any other feature in the landscape, makes St Mary's Loch an object of interest to lovers of poetry. Almost every mountain and stream in 'fair Etrick Forest' have been hallowed by the genius of the bard, who

'Found in youth a harp among the hills,
Dropt by the Elfin-people; and whilst the moon
Entranced hung o'er still St Mary's Loch,
Harp'd by that charmed water, so that the swan
Came floating onwards through the water blue,—
A dream-like creature listening to a dream;
And the Queen of the Fairies rising silently
Through the pure mist, stood at the shepherd's feet,
And half-forgot her own green paradise,
Far in the bosom of the hill,—so wild!
So sweet! so sad! flowed forth that shepherd's lay.'

'My beloved Shepherd,' said Christopher North in 1824, 'some half century hence your effigy will be seen on some bonny green knove in the Forest, with its honest

face looking across St Mary's Loch, and up towards the Grey Mare's Tail; while by moonlight all your own fairies will weave a dance round its pedestal.' This prediction has been almost exactly verified by the erection in 1860 of a monument on a grassy esplanade at the head of the loch. It consists of a square pedestal and a statue, 9½ and 8½ feet high, of Denholm freestone, by Andrew Currie, F.S.A., himself a native of 'the Forest.' The Shepherd, with plaid around him, is seated on an oak-root; at his feet lies Hector, his favourite dog; his right hand rests on a staff, and his left holds a scroll inscribed with the last line of the *Queen's Wake*—

'He taught the wandering winds to sing.'

Opposite, on the wooded patch of holm between the lochs, 19 miles WSW of Selkirk, is St Margaret's Cottage or 'Tibbie Sheils,' long kept by Mrs Richardson (1781-1878), and the scene of one of the *Noctes*. The inn has been added to considerably of late. Here 'Christopher North' used to reside with his family in the autumn, and Tibbie and her cosy 'cottage' occupy no small part of the *Noctes*. The 'Ettrick Shepherd' also made the 'wren's nest,' as he called the inn, a frequent resting-place, not only on account of Tibbie having been long a servant in his father's house, but also to meet several of his literary friends, on which occasions the mirth often made the rafters ring. For many years Tibbie's fireside had been the haunt of poets and other writers, and some lyrics have been sung in her praise. She and her husband, who predeceased her fifty-six years, both lie buried in Ettrick churchyard. The RODONO Hotel has been noticed separately, as also are BINRAM'S CROSS, BLACKHOUSE, CHAPELHOPE, COPPERCLOUGH, DOUGLAS BURN, DRYHOPE, HENDERLAND, and MOUNT BENDER. On the NW shore of the loch, 7 furlongs from its head, is the site of St Mary's kirk, with its ancient graveyard. This, too, the poet's pen has rendered a classic spot. In this lonely place the bones of many an outlaw mingle with the dust; and here the shepherd of the present century still finds his last resting-place.

'For though in feudal strife a foe
Hath laid our Lady's chapel low,
Yet still beneath the hallowed soil
The peasant rests him from his toil:
And, dying, bids his bones be laid
Where erst his simple fathers prayed.'

This ancient chapel is the subject of many traditions, and of numerous ballads and poems of ancient and modern date.

'St Mary's Loch lies shimmering still,
But St Mary's kirk-bell's lang dune ringing!
There's naething now but the grave-stane hill
To tell o' a' their loud psalm-singing!'

Among the ballads, that of *The Douglas Tragedy* has been rendered widely familiar by the *Border Minstrelsy*. Another ancient and very popular tradition furnished the ground-work of Hogg's ballad of *Mess John*; and the chapel is the scene of the principal incident in his ballad of *Mary Scott*. Here the daughter of stern Tushilaw is supposed by the poet to have been brought to be buried; here she awoke from that sleep which seemed to all the sleep that knows no waking; and here she was married to her lover, Pringle, Lord of Torwoodlee.—*Ord. Sur.*, sh. 16, 1864.

St Mary's Tower, the Scottish seat of the Duke of Rutland, in Little Dunkeld parish, Perthshire, near the right bank of the Tay, a little way E of Binnam. It is a large and stately Scottish Baronial edifice, of modern erection, with very beautiful grounds.—*Ord. Sur.*, sh. 48, 1868.

St Monance. See ABERCROMBIE.

St Mungo, a parish of Annandale, Dumfriesshire, whose church stands near the right bank of the Water of Milk, 3 miles S by E of the post-town, Lockerbie. It is bounded NE by Tundergarth, E by Hoddam, S by Cummertrees, SW by Dalton, and W, NW, and N by

Dryfesdale. Its utmost length, from N by E to S by W, is 5½ miles; its breadth varies between ½ mile and 3½ miles; and its area is 4932½ acres, of which 35½ are water. The river ANNAN winds 3½ miles south-eastward along all the Dalton and Cummertrees boundary; and the Water of MILK 6 miles south-by-westward—mainly through the interior, but for the first 1½ mile along the boundary with Tundergarth, and for the last 5½ furlongs along or near to that with Hoddam—until it falls into the Annan at the SE corner of the parish. Springs of the purest water, welling up from the rocks, and maintaining, in some cases, an equable temperature all the year round, are both many and copious. The general surface is slightly uneven, sinking little below 130, and little exceeding 300, feet above sea-level; but in a wing of the parish to the E of the Caledonian railway it attains near Cowdens a maximum altitude of 603 feet. Seen from distant heights which command a maplike view of it, the parish looks almost flat; but, though not strictly hilly, it has such swells and eminences as, with aid of Brunswark Hill in the neighbouring parish of Hoddam, and the wooded rising grounds of Kirkwood in Dalton, present on nearer inspection a gracefully varied and pleasing landscape. Silurian and Devonian rocks predominate; limestone has been quarried on the north-eastern border; sandstone and shale, belonging to the Carboniferous formation, are at the head of the gleebe; porphyritic amygdaloid forms the main mass of Nutholm Hill; and galena, jasper, and chalcodony are found in various parts. The soil on about 280 acres of holm-land adjacent to the Annan and the Milk is a rich, deep alluvium, and elsewhere varies considerably. Nearly nine-tenths of the entire area are in tillage, and some 300 acres are under wood. A sepulchral tumulus was removed about 1830 from Sorriskemuir; an ancient Caledonian camp was formerly near the site of that tumulus; and on Cowdens farm is the spot where Ralph Erskine's tent was pitched at the introduction of Secession principles to Annandale. Mansions, noticed separately, are CASTLEMILK and MURRAYFIELD; and Sir Robert Jardine, Bart., is chief proprietor. St Mungo is in the presbytery of Lochmaben and the synod of Dumfries; the living is worth £308. The original parish church, which was dedicated to St Mungo or Kentigern, stood on the left bank of the river Annan, 1½ mile SW of the present one, and was a cruciform First Pointed edifice, partly rebuilt in 1754 and 1805. This church was confirmed by Robert de Bruce in 1174 to the episcopate of Glasgow, and became a mensal church of that see till the Reformation. The bishops of Glasgow are conjectured—chiefly from some remains visible at the end of the 18th century of an ancient village, and of an extensive garden with a fish-pond—to have had a residence here. In 1116 the parish bore the name of Abermilk ('confluence of the Milk')—a name exchanged for Castlemilk by 1170, and afterwards for St Mungo. For a short period succeeding 1609 the parish was annexed to Tundergarth. The present church, on a picturesque site 200 yards to the SE of its predecessor of 1842, is a handsome edifice erected in 1875-77 at a cost of £5000, the whole defrayed by Mr Jardine of Castlemilk. Scottish Gothic in style, from designs by the late David Bryce, R.S.A., it is built of light grey freestone, and has 350 sittings, stained-glass windows, and a massive NE tower, 19 feet square and 70 high. The public school, with accommodation for 150 children, had (1893) an average attendance of 111, and a grant of £111, 9s. Pop. (1801) 644, (1831) 791, (1861) 686, (1871) 658, (1881) 653, (1891) 603.—*Ord. Sur.*, sh. 10, 1864.

St Ninians or St Ringans, a large parish containing a post-town of the same name in the NE of the county of Stirling. It is bounded N by Perthshire, by the parishes of Logie and Stirling, and by Clackmannanshire, E by the parish of Airth, S by the parishes of Larbert, Dunipace, Denny, and Kilsyth, W by the parish of Fintray, and WNW by the parish of Gargunnoch. In order to adjust the boundaries of the two parishes of

St Ninians and Stirling, the Boundary Commissioners in 1891 transferred to the parish of Stirling the three detached parts of St Ninians parish, situated at the Craigs, Allan Park, and Shiplough—all within the parliamentary limits of the burgh of Stirling, and comprising respectively 6, 12, and 170 acres; also the parts of the same parish situated at Raploch, to the east of the western parliamentary boundary of the burgh of Stirling, and at Forthbank, to the west of the eastern parliamentary boundary of the burgh. They at the same time transferred to St Ninians parish those portions of Stirling parish which lay on the right bank of the river Forth and to the east of the eastern parliamentary boundary of the burgh of Stirling, and also the portion which lay to the east of the Stirling and St Ninians Road and of Port Street, and to the south of Craigs Street. The boundary is largely natural. From the NW corner the line follows the N side of the Forth from the mouth of the West Carse Burn downwards to the junction with the Teith, and then the middle of the river downwards to the mouth of East Mains Burn, except for $1\frac{1}{2}$ mile N of the town of Stirling, where the parish of Stirling comes in, the whole distance traced by the Forth being $19\frac{1}{2}$ miles following the windings of the river. On the E the line largely follows the courses of the East Mains, Darnbog, and Tor Burns; on the S those of Tor Burn and the river Carron, which forms the boundary for $6\frac{1}{2}$ miles; and on the W those of Endrick Water and Burnfoot Burn. The greatest length of the parish, from the junction of the Darnbog and Tor Burns to form the Pow Burn on the E, to the junction of Burnfoot Burn with Endrick Water on the W, is $12\frac{1}{2}$ miles; and the greatest breadth, from the junction of the rivers Forth and Teith on the N, to the junction of Buckie Burn with the river Carron on the S, is 7 miles. The height above sea-level rises from 28 feet near the Forth in the NE corner and 85 near the Forth at the NW corner, towards the S and W borders. The central portion of the parish is on an average from 200 to 300 feet high; and at Gillies Hill the height is 500 feet, at Great Hill W of Sauchie House 881, above Barr Wood SW of Auchenzie House 508. The highest ground, forming the eastern extremity of the LENNOX HILLS, is in the W and SW, at Scout Head (705 feet), Earl's Hill (1448), Hart Hill (1428), Cringate Law (1800)—including the moorlands of Touch Muir, Touchadam Muir, The Fell, and Cringate Muir—Cairnoch Hill (1854), Craignett Hill (1171), Craigenelt Hill (1000), and Dundaff Hill (1157). The ground is divided into what is locally known as carse, dryfield, and moorland. The first—which occupies the southern and eastern districts—was, before the march of modern agricultural improvement began, a flat stretch of morass, but is now highly cultivated, and produces heavy crops. The part of it along the edge of the Forth has to be protected by strong embankments against the overflow of the river during floods. The dryfield—the most extensive of the three—is the higher ground behind the carse, with an undulating surface sloping chiefly to the N and E. It is highly cultivated, and has numerous hedgerows and plantations. The moorland, lying in the W and SW among the heights already mentioned, comprises about $\frac{1}{4}$ of the whole area. The northern part is heathy, but the southern abounds in excellent pasture, and there is some good and well-cultivated haughland along the river Carron. The soil of the carse is an alluvium 8 to 20 feet deep, and below this lie successively layers of moss, drift, and sand. The whole of it has been, within a comparatively recent period—certainly subsequent to the appearance of man—beneath the level of the sea, but there must have been a land surface previous to the formation of the upper alluvial deposits, as the layer of moss beneath these contains bark and branches of hazel. At the time of the battle of Bannockburn the carse seems to have been an impassable morass. The underlying rocks are carboniferous, those to the E belonging to the Coal-measures, those in the centre to the Carboniferous Limestone series, while on the W throughout the moorland district

are interbedded basalts. There are collieries at Auchenzie, Bannockburn, Cowie, Greenyards, and Plean, and the other beds are quarried at different places. The drainage of a small portion of the parish in the extreme W goes to the great Clyde basin, being carried off by ENDRICK WATER and Burnfoot Burn and the smaller streams flowing to it; the surplus rainfall elsewhere goes to the Forth. Along the N it is carried off by the river Forth itself, which receives in the NW corner the Baston and Touch Burns—the latter receiving the Craigbrock Burn—and elsewhere along the N a number of smaller streams. Flowing through the centre and NE of the parish is the Bannock Burn, which, rising at Earl's Hill, has a course of 14 miles north-eastward to the Forth, receiving near the middle of its length Sauchie Burn. Besides the streams already mentioned on the E and S borders, there are also in the SE Small Burn, uniting with some other streams to form Sauchinford Burn flowing to Tor Burn, and Plean Burn also flowing to Tor Burn; in the centre of the S side Auchenzie Burn, which passes through the parish of Dunipace to the Carron; and in the SW Buckie Burn and Earl's Burn, both flowing to the Carron. On Touch Burn is a waterfall called Gilmour's Linn, and on the river Carron another called Auchentillin's Spout. Neither are of any great height. The only lake is Loch Coulter, near the middle of the S side, which is separately noticed.

There are a number of tumuli, and at that at Ghosts' Knowe, on the Buckie Burn, near the centre of the S side of the parish, a sepulchral chamber was opened in 1889, but the valuable find of implements, etc., was scattered by the ignorant workmen employed. The Roman road from Camelon northwards entered the parish about $\frac{1}{2}$ mile W of Carbrook House (in Dunipace parish), and ran in a straight line north-westward to Snabhead, SW of Bannockburn House, where it turned NNW and ran parallel to the modern road through the town of St Ninians to Stirling and to the W of it. A few traces of it are still to be seen, as well as of some of the stations. The old pronunciation and often the spelling of the name was St Kingans, which is still in common local use, though it is now beginning to be superseded by St Ninians, which has been the spelling since the end of the 18th century. There must have been a church here from a very early date, and the dedication was to St Ninian, who flourished in the end of the 4th and the beginning of the 5th centuries, and who converted the southern Picts to Christianity. (See WHITHORN.) This church was probably near the well called St Ninian's Well, on the S side of Stirling. In the reign of David I. Robert, Bishop of St Andrews (1126-58), granted to the newly founded Cambuskenneth Abbey 'the church of Egglis St Ninians, with its chapels of Dunipace and Lithbert, and all its other chapels and oratories, and all other pertinents; but whether this church was on the site of the early one or occupied the same position as the present church cannot now be determined. Another church at Kirk-o'-muir, $7\frac{1}{2}$ miles SW of the present parish church, is said to have been one of the earliest churches in Scotland where the sacrament of the Lord's Supper was dispensed by the Reformers in Scotland. It figures in the Commissary's list as the church of a distinct parish apart from St Ninians, but no traces of the building are now to be seen, though the churchyard remains. There was also a chapel at Cambusbarron, and another dedicated to the Virgin Mary at Skeoch, $\frac{1}{2}$ mile NE of Bannockburn. In the extreme SW of the parish are the ruins of a castle, once the stronghold of Sir John Graham, the companion of Wallace; and near it are the lands of Dundaff, from which the Duke of Montrose, who is sprung from an elder branch of the same family of Graham, takes his title of Viscount of Dundaff. There are also ruins of old castles at Sauchie and Carnock, which are separately noticed. Traversed by the great main road from Edinburgh to Stirling and the north, the parish has been the scene of many of the events connected with the national history of Scotland. To the SW of the town

of St Ninians is the Bore-stone marking the place where Bruce's standard was planted during the battle of Bannockburn. The battle itself is separately noticed, as are also the battles of Sauchieburn and Stirling Bridge, the latter under Stirling. The town of St Ninians was the limit of the pursuit of the surprise party from Edinburgh which in 1571 attacked Stirling and attempted to carry off the Regent Lennox, who was slain in the skirmish that followed. The exact spot where the Regent fell was formerly pointed out at Newhouse between Stirling and the town of St Ninians; but, considering the whole circumstances, the place where he received his mortal wound was probably nearer Stirling. A heap of stones raised to mark the spot was removed when the road was widened in 1758. In 1745 Prince Charles Edward Stuart, on his march to the south, spent a night at Bannockburn House; and in January 1746, when on his return to the north, he made that house his headquarters. While lodging there he was shot at, and the mark made by the bullet is still shown in one of the rooms. On the morning of the 17th January he drew up his army on Plean Moor preparatory to their march to the battlefield of Falkirk; and on the 1st of February, just as the retreat northward was begun before the approaching forces of the Duke of Cumberland, the parish church, which had been used by the Highland army as a powder magazine, was blown up, whether purposely or accidentally is not known. The steeple remained entire, and, as the new church was built at some distance from it the tower still stands a lonely witness to the rebellion of 1745. The parishioners here suffered so much from a case of intrusion in 1734, and from another in 1773, that they adopted towards the end of the century a very effective method of dealing with the patronage question by buying up the rights of the patron in 1758 at a cost of between £600 and £700, which they raised by voluntary contributions among themselves. In the immediate neighbourhood of Plean *quoad sacra* church is an asylum founded and endowed by the late Francis Simpson, Esq. of East Plean, for the residence and support of indigent old men, preference being given to those who have served in the army or navy. It has usually about 30 inmates. Distinguished natives of the parish are Dr Henry, the historian (1718-90), who was born at Muirton; Sir George Harvey, P.R.S.A. (1805-76); and Dr Robert Buchanan, Free Church leader (1802-75); and Miss Hamilton (1758-1816), author of the *Cottagers of Glenburnie*, resided at Crook while composing that work. The parish is traversed by main roads from Stirling to Falkirk, Edinburgh by Falkirk, Denny, Glasgow, and Balfour; and there are also a large number of good district roads. A reach of the North British and Caledonian joint railway from Edinburgh and Glasgow, which passes across the SE and centre for $5\frac{1}{2}$ miles, has a station at Bannockburn, $33\frac{1}{2}$ miles NW of Edinburgh, 27 NE of Glasgow, and $2\frac{1}{2}$ SSE of Stirling; and access is also readily obtained from Stirling station. In the E end of the parish the South Alloa branch of the Caledonian railway has a course of $2\frac{1}{2}$ miles before it passes into Airth parish close to Dunmore Pottery, where the branch to Alloa strikes off to the left, and traversing the NE corner of St Ninians parish crosses the Forth by a new bridge about a mile above the ferry. (See ALLOA.) A reach of the Forth and Clyde railway passes for 5 miles along the northern border from Stirling westward. The industries other than farming are noticed in connection with the villages. An important annual market for cattle and horses is held at Bannockburn on the third Tuesday of June. The principal mansions, most of which are separately noticed, are Auchenbowie House, Bannockburn House, Carnock House, Craigforth, Gartur, Laurehill, Easter and Wester Livlands, Plean House, Polmaise, Sauchie House, Seton Lodge, and Touch House.

St Ninians is in the presbytery of Stirling and synod of Perth and Stirling, and the living is worth £440 a year. The parish church at the town was built in 1750, and contains about 1500 sittings; and there are *quoad*

sacra churches at Bannockburn and Plean, the former dating from 1838 and the latter from 1839. The old Free church was altered and fitted up as a parish hall in 1892. It contains a public hall, rooms for classes, library and reading-room, recreation room, baths, and keeper's house. There are also Free and U.P. churches at Bannockburn and the town of St Ninians, and a Free church at Cambusbarron. The first Relief congregation, that at the town, was formed after the forcible induction of a parish minister in 1773, and that at Bannockburn in 1797. There is also a mission station in the town in connection with the Episcopal church. Under the School Board are Bannockburn, Cambusbarron, East Plean, Fallin, Milton, Muirland, and West Plean public schools, and Sauchie female school, which, with accommodation for 501, 268, 150, 60, 150, 40, 100, and 71 pupils respectively, had in 1893 attendances of 378, 158, 91, 42, 97, 16, 52, and 29, and grants of £330, 15s., £149, 10s., £80, 9s. 6d., £52, 15s., £91, 15s., £30, 12s., £53, 10s., and £46, 13s. At Bannockburn there is also the endowed Wilson Academy, founded and endowed in 1848 by Sir James Wilson, and further endowed by his sister in 1849 and 1859. Under the Educational Endowment Act the building was handed over to the School Board along with one-third of the revenue, while about three-eighths of the revenue were devoted to the assistance of technical education in Stirling, and the rest of the income to the foundation of six bursaries to enable children of merit resident in the village of Bannockburn to attend Stirling High School. The principal proprietors are the Duke of Montrose, the Earl of Dunmore, Sir James R. Gibson-Maitland of Sauchie, and Colonel John Murray of Touchadam and Polmaise. Valuation (1885) £55,167, (1892) £55,417. Pop. of parish (1801) 6849, (1831) 9552, (1861) 8946, (1871) 10,146, (1881) 10,423, (1891) 9571, of whom 4591 were males and 4980 were females, while 5737 were in the ecclesiastical parish. Houses (1891) inhabited 2090, uninhabited 227, and being built 7. The population of the landward portion of the parish in 1891 was 4663, of whom 2310 were males and 2353 females.—*Ord. Surv.*, shs. 39, 31, 1869-67.

Besides the post-town of the same name, the parish contains also the post-towns of Bannockburn and Cambusbarron and the villages or hamlets of Auchenbowie, Belfield, Chartershall, Muirton, Newhouse, Plean, Torbrex, and Whins of Melton, most of which are separately noticed. The town of St Ninians stands in the N of the parish, close to the S side of Stirling. Up to 1724 it was simply the Kirkton, but has since then been known as St Ringers or St Ninians. Although nominally $\frac{1}{4}$ mile S of Stirling, it is in reality part of that town, being within its boundaries. It consists mainly of one long narrow street along the great south road from Stirling, just to the N of the point where it forks into the roads leading to Glasgow and Edinburgh. The houses are curious and old-fashioned, and many of them bear rude sculpturings of dates, initials, and sometimes of the tools of the tradesmen to whom they originally belonged. St Ninians has a share in the woollen industries connected with Stirling, Bannockburn, and Cambusbarron, and has still some manufacture of nails and screw-bolts of its own as well as tan-works of considerable size.

St Quivox, prior to 1895 an independent parish of Kyle, Ayrshire, but by an Order of the Secretary for Scotland, dated 31 January of that year, amalgamated with the parishes of Ayr and Newton-upon-Ayr—the combined parish being called the Parish of Ayr. St Quivox is $4\frac{3}{8}$ miles in length; its breadth varies between $\frac{3}{4}$ mile and $2\frac{1}{2}$ miles; and its area is $4930\frac{1}{2}$ acres, of which $54\frac{1}{2}$ are water. The beautiful river Ayr curves $5\frac{1}{2}$ miles west-south-westward along all the south-eastern and southern boundary, its banks in places being steep and wooded. The surface rises north-eastward to 228 feet above the sea at Brocklehill; but the southern and western districts are low and level, at no point much exceeding 60 feet. The rocks are carboniferous, and coal and excellent sandstone have both been worked.

The soil is sandy in the W, in the centre is light and gravelly on an irrelative subsoil, and on the eastern border is a stiffish clay. Nearly 250 acres are under wood; and almost all the remainder is arable. Mansions, noticed separately, are AUCHENCROUVE and CRAIGIE. Giving off since 1874 the *quoad sacra* parish of Wallace-town, St Quivox is in the presbytery of Ayr and the synod of Glasgow and Ayr; the living is worth £320. The ancient parish church was originally, and for centuries, called Sanchar, the antique form of the modernised Sanquhar, from the Gaelic *sean*, 'old,' and *cathair* or *caer*, 'a fort.' In 1212 it was a rectory, between 1229 and 1238 it belonged to the short-lived Gilbertine convent which the second Walter the Steward established at Dalmulin, and from 1238 till the Reformation it belonged to the monks of Paisley. Though Sanchar continued to be the name of the several estates which were portions of the ancient territory or manor, the church appears at the Reformation under the designation of St Kevoc. This name is commonly supposed to be derived from Kevoca, a holy virgin of Kyle, who lived in the first half of the 11th century; but Bishop Forbes, in his *Kalendar of Scottish Saints* (1872), refers it to the Irish saint, Caemhan or Pulcherius, the affectionate form of whose name is *Mo-chuamhoc*, pronounced *Mo-keevoc*. The present parish church, near Auchencroive station, is of pre-Reformation date, and as enlarged about 1825 contains nearly 500 sittings. Two public schools, St Quivox and Whitellets, with respective accommodation for 93 and 164 children, had (1893) an average attendance of 72 and 102, and grants of £69, 15s. 6d. and £102, 12s. 6d. Valuation (1885) £12,076, 9s. 8d., (1894) £10,198, exclusive of railway. Pop. (1801) 2070, (1831) 5289, (1861) 7097, (1871) 6069, (1881) 7352, (1891) 7713, of whom 1430 were in the ecclesiastical parish.—*Ord. Sur.*, sh. 14, 1863.

St Ringans. See ST NINIAN.

St Vigeans, a village and a coast parish of Forfarshire. The village, though small, is ancient; and is said to derive its name either from a hermit and confessor who died at Grange of Conon in the neighbourhood about the year 1012, or from the Irish ecclesiastic Fechin, abbot of Fobhar, who died in 664. It stands on the Brothock, $\frac{1}{2}$ mile N of Arbroath.

The parish of St Vigeans, one of the oldest in the country, consisted formerly of a main body and two detached portions. The smaller of these detached portions, that situated at Hospitalfield and comprising 133 acres, was transferred by the Boundary Commissioners in 1891 to the parish of Arbroath; while the larger, situated at Inverpeffer and comprising 1108 acres, was transferred to the parish of Panbride. Part of the parish of Arbroath was at the same time transferred to the parish of St Vigeans. (See ARBROATH.) The parish, containing great part of the town of Arbroath, is bounded N by Inverkeilor, E and SE by the North Sea, S by Arbroath and Arbriot, and W and NW by Carnyllie. It measures $7\frac{1}{2}$ miles from E to W; and varies in breadth between $1\frac{1}{2}$ and $4\frac{1}{2}$ miles. Up till about 1560 it included the entire town of Arbroath with its abbey, and was sometimes called Aberbrothock. From the boundary with Inverkeilor to within a mile of Arbroath, the coast of the parish is a range of almost perpendicular cliffs, with a maximum height of 157 feet. In nearly their whole extent their base is covered with water at full tide, so that for the most part access to the large and interesting caves, crevices, and arches which are numerous along the seaward face, is possible only at low water or by boat. The chief of these spacious and romantic caverns are the GAYLET POR, the Mason's Cave, and the Maiden Castle Cave. The cliffs figure in Sir Walter Scott's *Antiquary* as the scene of the dangerous adventure of Sir Arthur and Miss Wardour. The surface of the parish is mainly occupied by three different declivities or ridges; while the streamlet Brothock, flowing SSE, divides it into two tolerably equal parts. The chief eminences are Dichmont Law (323 feet), about $\frac{1}{4}$ mile from the coast, and Cairn Conan (597), in the W, $\frac{1}{4}$

miles from the sea, and commanding a beautiful and extensive view. Eruptive rock occurs in St Vigeans, but is not prominent; Old Red Sandstone is found tolerably general, and is extensively quarried at Whittingness, and has been a good deal used for building in Arbroath; and a softer variety, containing vegetable fossils, is quarried at Drummylee and Brax. Diluvial ridges, consisting of boulders, gravel, sand, and clay strata, several of them 1 mile long, lie along the sides of the Brothock, and have a maximum altitude of about 40 feet. Several rocky heights of sandstone also occur near the lower course of the Brothock. One of them affords a convenient and conspicuous site for the parish church; and another very similar in appearance, 180 yards distant, is famous for an echo of four syllables. The soil varies in character throughout the parish, but is preëminently fertile. In 1744, with the exception of garden ground, not more than 40 acres were enclosed within the parish. Now rather more than 800 acres are under wood, and nearly all the remainder is in tillage. The industries of the parish include, besides agriculture, a part of the textile industry in ARBROATH, with fishing at AUCHMITHIE, and spinning in an extensive establishment at Inchmill, originally erected in 1808. The roads of the parish are good; and a section of the Arbroath and Forfar branch of the Caledonian railway crosses it, as does also the Arbroath and Montrose section of the North British railway. Besides the village of the same name, St Vigeans parish includes the villages of AUCHMITHIE, COLLISTON, MARYWELL, and GOWANBANK, and part of the post-town of ARBROATH. The chief modern mansions are Letham, Seaton, Abbe-thune, Springfield, Parkhill, Newton, Millbank, Woodlands, Almeriecross, Beechwood, and Hospitalfield. The old mansion of Colliston is said to have been built by Cardinal Beaton for his son-in-law.

St Vigeans itself is in the presbytery of Arbroath and the synod of Angus and Mearns; the living is worth £393. The parish is divided ecclesiastically into St Vigeans proper and the *quoad sacra* parishes of AUCHMITHIE, COLLISTON, and INVERBROTHOCK, with parts of the *quoad sacra* parishes of St Margaret's, LADYLOAN, and ABBEY Arbroath. The parish church was originally erected not later than the beginning of the 11th century, but it was considerably enlarged before 1242, and repaired in 1485. Alterations or repairs took place during the 18th century, and some enlargements in 1822 and 1827, in course of which the church lost much of its original Saxon or Norman character. In 1872, however, it was restored at a cost of fully £3000, to a plain uniform 15th century Gothic style; and it now comprises a nave, aisles, pentagonal chancel, with a square tower and spire, while the interior is adorned with a carved oaken pulpit, an octagonal baptismal font, and beautiful stained-glass windows. It contains about 900 sittings. Both the ancient church and the surrounding burying-ground were noted for sculptured sepulchral stones; and several ancient crosses and finely executed mouldings have been found. A chapel, dedicated to St Ninian, formerly stood near the sea; and the adjacent St Ninian's Well was believed to possess great curative powers. Two public schools, Colliston and St Vigeans, with respective accommodation for 170 and 188 children, had (1893) an average attendance of 97 and 85, and government grants of £96, 9s. 6d. and £88, 16s. Valuation (1885) £20,970, (1893) £17,384, plus £3163 for railway. Pop. of civil parish (1801) 4243, (1831) 7135, (1861) 10,537, (1871) 12,805, (1881) 14,982, (1891) 15,620, of whom 1299 were in the ecclesiastical parish.—*Ord. Sur.*, shs. 57, 49, 1868-65.

Salachie, Loch, or Lochan t-Salachaidh. See GOLSPIE.

Salen, a *quoad sacra* parish in the NE of Mull island, Argyllshire, on the Sound of Mull, containing Aros post office, an Established church (*circa* 1733), a Free church (1883), St Columba's Episcopal church (1874), a public school, and a hotel. Pop. (1871) 605, (1881) 600, (1891) 622, of whom 359 were in Torosay parish and 162 in Kilninian and Kilmore.

Salen, a place in Ardnamurchan parish, Argyllshire, on the N shore of Loch Sunart, 10 miles WNW of Strontian. It has an inn and a post office, with money order, savings bank, and telegraph departments.

Saline, a village and a parish in the NW corner of the west division of Fife. The village, standing 405 feet above sea-level, at the SW base of Saline Hill, is $2\frac{3}{4}$ miles N by W of Oakley station on the Alloa and Dunfermline section of the North British railway, and $5\frac{1}{2}$ NW of Dunfermline, under which it has a post office, with money order and savings bank departments. It is a pleasant little place, clean and picturesque in appearance, the houses neatly built and whitewashed, and all with small gardens attached. Pop. (1871) 396, (1881) 369, (1891) 304.

The parish is bounded N and NW by Fossoway and Cleish in Kinross-shire, E by Dunfermline, SE by Carnock, SW by Culross, and W by Clackmannan. Its utmost length, from E to W, is $5\frac{1}{2}$ miles; its utmost breadth, from N to S, is $3\frac{1}{4}$ miles; and the area is 8768 acres. The parish of Saline had a detached part, containing 1154 acres, situated at Inzievar, and adjoining the parish of Torryburn; and the parish of Torryburn had a detached part, containing 1734 acres, situated at or near the lands of Cults, and lying to the north of the parish of Saline. The Boundary Commissioners in 1891 caused these parishes to exchange their detached parts. The drainage is mainly carried west-south-westward towards the Forth by the Black Devon; and in the extreme W the surface declines to 200 feet above sea-level, thence rising eastward to 340 feet near Stand Alane, 700 near Bandrum, 627 near Miry Hall, and 1178 at Saline Hill. Coal, limestone, and ironstone have been largely worked; and the soil of the low tracts is mostly a mixture of clay and loam incumbent on till, generally somewhat shallow, but in places extremely fertile. The uplands are chiefly pastoral, and partly marshy, yet include some good arable tracts. Peat moss abounds in the marshy parts, and affords excellent peat fuel. The antiquities are some cairns, two Roman camps, and two old towers; and mansions, noticed separately, are BALGONAR, BANDRUM, and KINREDER. Including ecclesiastically a portion of TORRYBURN, Saline is in the presbytery of Dunfermline and the synod of Fife; the living is worth £164. The parish church occupies a conspicuous site, and is a handsome Gothic edifice. There is also a Free church; and the public school, with accommodation for 200 children, had (1893) an average attendance of 159, and a grant of £131, 19s. Valuation (1885) £7936, 16s. 3d., (1893) £8350, 11s. Pop. of ecclesiastical parish (1881) 1038, (1891) 965; of civil parish (1801) 945, (1831) 1139, (1861) 1610, (1871) 1259, (1881) 954, (1891) 760.—*Ord. Sur.*, shs. 40, 39, 1869-67.

Salisbury Craigs. See ARTHUR'S SEAT and EDINBURGH.

Salloch. See GLENSALACH.

Salisbury or Salysburgh, a village, with a post office, in Shotts parish, Lanarkshire, $3\frac{1}{4}$ miles NW of Shotts station, and $4\frac{1}{2}$ ENE of Holytown. Pop. (1861) 325, (1871) 553, (1881) 576, (1891) 481.

Saltburn, a village, with a public school, in Rosskeen parish, NE Ross and Cromarty, on the shore of the Cromarty Firth, $1\frac{1}{2}$ mile NE of Invergordon.

Saltcoats, a town in Cunninghame district, Ayrshire, in the parishes of Ardrossan and Stevenston. Lying about the middle of the northern side of the Bay of Ayr, $1\frac{1}{2}$ mile ESE of the town of Ardrossan, it has a station on a branch line of the Glasgow and South-Western and another on the Lanarkshire and Ayrshire railway (opened in 1888), 4 miles WSW of Kilwinning Junction, and $2\frac{1}{2}$ SW of Glasgow, and is one of the favourite watering-places of the inhabitants of the west. Its site is low level ground in the vicinity of sandy bluffs and flat expanses, but is relieved from dullness by the vicinity of a range of high ground to the N, and by the prospect across the waters of the splendid mountains of Arran. What with a colliery at the east end of the town, its proximity to Ardrossan on the one side with its har-

bours and docks, and with Stevenston on the other with its colliery, explosive works, and foundries, the trade and the population of the place have gone on increasing. In the west end a large number of private residences have been erected. Possessing an extensive sandy beach on each side of the town, Saltcoats is much resorted to for sea-bathing, a select place at the North Pans having been opened formally in 1894, when a number of seats also were placed along the shore at suitable sites, and the amenity of the east shore otherwise improved. Great improvements have likewise been effected in the town. Large alterations and additions to the railway station in 1894, and the construction of additional sheds, caused extensive alterations and improvements on the roads in the neighbourhood. Some of the churches, and one or two other public buildings, have claims to architectural beauty. The Town-hall, opened in 1892, and costing about £4000, was erected on the site of the old parish school and immediately to the south of the old Town-house and steeple (erected in 1825), with the picturesque style of which it is made to harmonize in some degree. The public hall, with gallery, is capable of holding 850 people, exclusive of the platform. A spacious landing on the upper floor leads to the gallery, to the court-room, and to the old town-house. There are also retiring-rooms, a cloak-room, and lavatories. At the opening ceremony a bust of the late Mr William Burns, a distinguished native of Saltcoats, was presented by his step-son Lord Shand. Places of worship in Saltcoats are Ardrossan parish church (1774), the North church, the Free church, the Gaelic Free church, the Trinity and West U.P. churches, the E.U. church, Salvation Army barracks, and the Roman Catholic church of Our Lady, Star of the Sea (1856). The last is a good Early English edifice, built at a cost of £2200. A hall in connection with the Young Men's Christian Association was erected in 1893. The public school, French Gothic in style, with accommodation for 689 children, and with a bell-tower 60 feet high, was erected in 1876; and in 1885 another school, with accommodation for 289 children, was erected in place of Kyles Hill School. There is also a Roman Catholic school, with accommodation for 313 children. The town has an abundant supply of gravitation water of excellent quality, a post office, with money order, savings bank, insurance, and telegraph departments, branches of the Bank of Scotland and Royal Bank, three hotels, a gas company (who light the town lamps free), an admirable drainage system and excellent paving, a cemetery, a horticultural society, homes for the destitute, several halls, a Young Men's Christian Association, a golf club, a bathing club, etc. The Mission Coast Home, comprising three buildings and affording accommodation and treatment for about 60 inmates, is supported by voluntary contributions. Saltcoats was made a burgh of barony by a charter of 1528; but it soon lost its burghal character, and almost sank into extinction. It was originally a collection of clay-built cots, inhabited by poor persons who manufactured salt in small pans and kettles; and it thence obtained the name of Saltcotes. But it possessed only a fitful prosperity, and about the year 1660 it had dwindled away to only four houses. In 1686, however, Robert Cunningham, whose uncle, Sir Robert, had purchased the barony of Stevenston in 1656, built several large saltpans at Saltcoats, placed the manufacture of salt on an entirely new and advantageous footing, constructed a harbour, formed a canal for the conveyance of coal to the harbour, and opened various coal-pits in the vicinity. The decayed hamlet grew suddenly into a considerable village, and the village thenceforth enlarged into a small town. The salt manufacture, engaging seven large saltpans, continued to flourish till the repeal of the salt duty in 1827, and is now quite extinct. A magnesia work, started in connection with the saltpans in 1802, was the earliest establishment of its kind in Scotland. Shipbuilding has at various periods been vigorously conducted, but has been so fitful as alternately to rise into prominence and to sink into extinction. The commerce of the port

has ceased for a good many years, having been absorbed by ARDROSSAN. It consisted chiefly in the export of coals to Ireland, and was of such extent that the amount of local dues yielded by it was about £120 a year. The harbour is a creek of the port of Irvine. Saltoats became a burgh in 1885, and by the Burgh Police Act of 1892 its affairs are managed by a provost, 2 bailies, and 6 commissioners. The design for the burgh seal was fixed by the burgh commissioners in 1894. On the top of the seal is a fishing smack, in the centre a representation of an old landmark—the saltpens—and on each side a herring. The motto is—*‘Per mare et per terram’* (By sea and land). A fair for cattle, pigs, and hiring is held on the last Thursday of May; and a justice of peace court sits on the first Friday of every month. Pop. (1821) 3413, (1841) 4238, (1861) 4780, (1871) 4624, (1881) 5096, (1891) 5895, of whom 3136 were females, and 4228 were in Ardrossan parish. Houses (1891) inhabited 1309, vacant 114, building 25.—*Ord. Sur.*, sh. 22, 1865.

Salthouse Head. See PETERHEAD.

Salton, a parish of W Haddingtonshire, whose church stands at East Salton village, in the centre of the parish, $6\frac{1}{2}$ miles SSW of Haddington, $5\frac{1}{2}$ SE of Tranent, and $2\frac{1}{2}$ ESE of the post-town, Pencaitland. Containing also West Salton village (1 mile WSW), with a post office, it is bounded N by Gladsmuir, NE by Haddington, E and SE by Bolton, S and SW by Humbie, and W and NW by Pencaitland. Its utmost length, from N to S, is $3\frac{1}{2}$ miles; its utmost width is $2\frac{1}{2}$ miles; and its area is $381\frac{1}{2}$ acres. The TYNE winds $2\frac{1}{2}$ miles north-eastward along or near to all the north-western and northern boundary; and its affluent, Salton or Birns Water, over the last $3\frac{1}{2}$ miles of its course, roughly traces all the southern, south-western, and western boundary. The surface has a general southward ascent—from a little below 200 feet at the northern border to a little over 500 at broad-based Skimmer Hill. On the SE and E this high ground is, in a certain degree, continued by low uplands; but on all other sides the surface falls gradually off to the boundaries, and becomes lost in levels of very humble altitude. A wood, which covers nearly 1 square mile, and is continuous with a forest of similar size in Humbie, occupies most of the hanging plain on the SW. The rocks are carboniferous; and limestone has been largely worked, whilst coal is believed to lie under the strata of limestone. The soil is very various, chiefly a deep rich clay, but also a clayey or friable loam and a light sand. Except the area under wood, and about 150 acres in permanent pasture, the entire parish is arable. Salton is noted for having been the first place in Scotland in which pot-barley was manufactured, and the first in Britain in which the weaving of hollands was established—both these industries having been introduced from the Netherlands by the lady of Henry Fletcher of Salton in or soon after 1710. It was also the first place in which a bleachfield of the British Linen Company was formed (in 1750), and one of the earliest in which a paper-mill and a starch-work were set up. It is further associated with the invention and improvement of some agricultural machines; but all its manufactures have long been things of the past. The parish is traversed by the road from Edinburgh, across the Lammermuirs, to Duns. In the 12th and the first half of the 13th century the manor of Salton belonged to the De Morvilles, lords high-constables of Scotland, and their successors the Lords of Galloway; but about 1260 the greater part of it seems to have been possessed by Sir William de Abernethy, whose descendant, Laurence, in 1445 was created Baron Saltoun (see PHILORTH). In 1643 the ninth Lord Saltoun sold the estate to Sir Andrew Fletcher, a judge of session, with the title of Lord Innerpeffer, among whose descendants have been Andrew Fletcher (1653-1716), the patriot and political writer, and Andrew Fletcher, Lord Milton (1692-1766), a distinguished judge. The present owner is John Fletcher, Esq. (b. 1827; suc. 1879). His seat, Salton Hall, on the right bank of Salton Water, $1\frac{1}{2}$ mile WNW of East Salton, was formerly a fortified

place of some strength, but, as modernised and improved in recent years, is now a fine Elizabethan structure, with a great square tower, a valuable library (formed by the patriot, Andrew Fletcher), and a large and well-wooded park (Jn. Small's *Castles and Mansions of the Lothians*, 1883). Another mansion, noticed separately, is HERDMANSTON. Gilbert Burnet, D.D. (1643-1715), historian and Bishop of Salisbury, was minister from 1665 to 1669, and at his death bequeathed 20,000 merks for the benefit of the parish, to be applied in building a schoolhouse, clothing and educating 30 poor children, improving a library for the use of the minister, &c. The proceeds of this bequest now amount to about £100. Patrick Scougal, D.D. (1608-82), was minister from 1659 to 1664, when he was raised to the bishopric of Aberdeen; and his son Henry (1650-78), author of *Life of God in the Soul of Man*, has been claimed—wrongly it would seem—as a native. Salton is in the presbytery of Haddington and the synod of Lothian and Tweeddale; the living is worth £267. The church, which was held by Dryburgh Abbey from its foundation till the dissolution, was annexed in 1633 to the short-lived see of Edinburgh. As almost rebuilt in 1805, it is a cruciform Gothic edifice, with 400 sittings, a tower and spire 90 feet high, and the family vault of the Fletchers. A Free church for Salton and Bolton is situated in the latter parish, $1\frac{1}{2}$ mile NNE of East Salton. Salton public school, with accommodation for 139 children, had (1893) an average attendance of 103, and a grant of £101, 13s. 6d. Valuation (1885) £6011, 9s., (1893) £4630, 12s. 6d. Pop. (1801) 786, (1831) 786, (1861) 712, (1871) 647, (1881) 575, (1891) 495.—*Ord. Sur.*, sh. 33, 1863.

Samphrey, an uninhabited island of Delting parish, Shetland, in the SE entrance of Yell Sound, $\frac{3}{4}$ mile S by W of the south-western extremity of Yell island. It has an utmost length and breadth of $7\frac{1}{2}$ and $4\frac{1}{2}$ furlongs, and attains a maximum altitude of 99 feet.

Samson's Ribs. See ARTHUR'S SEAT.

Sanda, a small island, belonging to the parish of Southend, Argyllshire. It lies at the W side of the entrance of the Firth of Clyde, $1\frac{1}{2}$ mile SSE of the nearest part of the peninsula of Kintyre, $6\frac{1}{2}$ miles ESE of the Mull of Kintyre, and 10 S by E of Campbeltown. It has an utmost length and breadth of $1\frac{1}{2}$ and $\frac{3}{4}$ mile, and a circumference of 4 miles; consists of sandstone rock; and has a tumulated surface, with an extreme altitude of 405 feet above sea-level. Moderately high cliffs form part of its shores; and one of these is pierced with a very large natural arch, and forms a very picturesque object. The island is covered with good grass, and is all disposed in sheep-walk, in the tenancy of one farmer. Two islets, called Sheep Isle and Glunimore, lie off its NE side, and are also clothed in good grass. A small, good, natural harbour lies between it and these islets, and is a place of shelter and rendezvous for the smaller sort of vessels which navigate the Clyde. This harbour was a common station of the Scandinavian fleets during the contests for the possession of Kintyre and the Hebrides. The island, in this connection, was then called Avona Porticosa—a name which it still retains, in the abbreviated form of Aven, among the Highlanders; but it figures, under its more proper name of Sanda, in the more ancient record of Adamnan's Life of Columba. There are remains on it of an ancient chapel which was dedicated to Columba, and of a circumjacent cemetery which appears to have long possessed some superstitious celebrity. A dangerous rock, above a mile in circumference, and bearing the name of Pateron's Rock, lies 1 mile E by N of Sanda; and, being always covered by flood tide, has endangered many a vessel. A lighthouse, erected on Sanda in 1850 at a cost of £11,931, and altered in 1881, shows an occulting light in a SW direction, from NW $\frac{1}{2}$ W round to SE by E $\frac{1}{2}$ E, visible at the distance of 18 nautical miles. There is also a fog syren. Pop. (1841) 11, (1861) 36, (1871) 57, (1881) 14, (1891) 36.—*Ord. Sur.*, sh. 12, 1872.

Sanday, a small island in the Hebridean parish of SMALL ISLES, Inverness-shire, lying on the S side of the

eastern extremity of CANNA, of which it may be viewed as constituting a portion, the two being united at low water by a beach of shell sand. It extends $1\frac{1}{2}$ mile east-by-southward, has a maximum breadth of 5 furlongs and an area of $577\frac{1}{2}$ acres, and is distant $2\frac{1}{2}$ miles from Rùm. Its surface is low at the side towards Canna, but rises at its south-western extremity to 192 and at its eastern to 131 feet above sea-level, terminating in abrupt cliffs, which are skirted with detached high masses of rock. See DUN-NA-FEULAN. Pop. (1871) 58, (1881) 62, (1891) 62.

Sanday, one of the most considerable of the North Isles of Orkney. It contains a post office station of its own name. It lies $2\frac{1}{2}$ miles N of Stronsay, $1\frac{1}{2}$ mile E of Eday, 7 miles E of Westray, and $2\frac{1}{2}$ S of North Ronaldshay. Its form is exceedingly irregular, and may, in a general view, be regarded as three large peninsulas and two small ones radiating from a common centre. Its length, from NE to SW, is $13\frac{1}{2}$ miles; and its breadth varies between $\frac{1}{2}$ mile and 5 miles. Excepting a hillocky ridge of 115 to 173 feet in altitude on its W side, the island is extremely flat. Its soil is everywhere light and sandy, and, when well manured with seaweed, produces as good crops as any which are raised in Orkney. The principal harbours are Kettletoft on the SE side of the island, and OTTERS-WICK BAY on the NE, both commodious and pretty safe. At Start Point, on the east, a lighthouse was erected in 1806, with a fixed red light, visible at a distance of 14 miles. Eleven small lakes, the largest about $2\frac{1}{2}$ miles in circumference, and two or three others not much inferior to this, occur in various parts of the island, particularly in the N. On the promontory of Els Ness, which projects to the S, and commands an extensive sea view, are upwards of twenty vitrified cairns, supposed by Dr Hibbert to have been signal stations of the Norsemen for communicating with their fleets in the sound. The other antiquities of the island are the ruins of one or two ancient chapels, and of some considerable Picts' houses. Sanday is ecclesiastically divided into LADY parish on the E, and the united parish of CROSS and BURNES on the W. There are U.P. and Free churches, and a Free Church preaching station. Five public schools—Burness, Cross, Lady (central), North Ronaldshay, and Sellibister—with respective accommodation for 60, 140, 96, 101, and 105 children, had (1893) an average attendance of 62, 29, 108, 60, and 49, and grants of £74, 2s. 6d., £51, 16s. 6d., £142, 14s., £45, 9s. 6d., and £68, 4s. 6d. Pop. (1811) 1839, (1861) 2145, (1871) 2053, (1881) 2082, (1891) 1929, of whom 1084 were in Cross and Burness, and 845 in Lady.

Sandbank and Ardnadam, two watering-places which are virtually one, lying on either side of the pier, in Dunoon parish, Argyllshire, on the S side of Holy Loch, opposite Kilmun, and $2\frac{1}{2}$ miles NNW of Dunoon town. Of recent origin, the place forms the upper end of the long line of summer sea-bathing resort extending through Hunter's Quay and Kilm to the southern extremity of Dunoon; occupies a similar site and enjoys similar amenities and advantages to those of Kilmun and Hunter's Quay; commands ready access to the romantic glens at the head of Holy Loch; enjoys communication with Greenock and Glasgow by means of the steamers; and has a post office, with money order, savings bank, and telegraph departments, 3 hotels, a pier 200 feet long, a club-hall, a bowling-green, a coffee-house, a good water supply, a *quoad sacra* church, a Free church, a public school, a dam for supplying the North British railway steamers with water led to the pier by iron pipes, and two newspapers—the Saturday *Argyllshire Standard* (1871) and the Wednesday *Cowal Watchman* (1876). The Established church, built as a chapel of ease at a cost of £840, has a stained-glass window, and was made *quoad sacra* in 1876. Pop. of village and parish (1871) 620, (1881) 570, (1891) 721.—*Ord. Surv.*, sh. 29, 1878.

Sandend, a fishing village in Fordyce parish, Banffshire, SE of Crathie Point, and $2\frac{1}{2}$ miles W by N of Portsoy.

Sanderay, an island in the Hebridean parish of Barra, Inverness-shire. It lies $3\frac{1}{2}$ miles S of the island of Barra, $2\frac{1}{2}$ miles NE of Pabbay, and $\frac{1}{2}$ mile SSE of Vatersay, being separated from the last by a strait called the Sound of Sanderay. Though indented in outline, it is not far from being circular, with a diameter of $1\frac{1}{2}$ mile; and it consists of a single hill of gneiss, which attains an elevation of 800 feet. To a certain extent it is sheltered from the western swell by the islets Fladda and Linga, but it is so covered with drifted calcareous sand as to present the appearance, at some distance, of being sheeted with snow. A very large Danish dun is on its E coast. Pop. (1871) 7, (1881) 10, (1891) 4.

Sandford. See STONEHOUSE.

Sandford Bay. See PETERHEAD.

Sandhaven. See PITULLIE and PITSLIGO.

Sandhead, a village in Stoneykirk parish, Wigtownshire, on Luce Bay, 7 miles S by E of Stranraer. It has a post and telegraph office, an inn, a public school, a neat and substantial co-operative creamery, erected in 1894, and a natural harbour consisting of a small bay, and affording anchorage for lime and coal sloops.—*Ord. Surv.*, sh. 3, 1856.

Sands, a mansion in Tulliallan parish, Fife, near the shore of the Firth of Forth, $1\frac{1}{2}$ mile SE of Kincardine. Its owner is Laurence Johnston, Esq. (b. 1856).—*Ord. Surv.*, sh. 39, 1869.

Sandside Bay. See REAY.

Sandsound Voe, an elongated narrow bay or sea-loch in Sandsting parish, Shetland. It opens at the extremity of the N side of Scalloway Bay, strikes $5\frac{1}{2}$ miles north-north-westward, and is all narrow and winding.

Sandsting and Aithsting, a united parish in the middle of the Mainland of Shetland, 13 miles and upwards NW of Lerwick, under which there are post offices at Tresta and Garderhouse. It comprises the islands of Vementry and Papa Little, with a number of smaller islets, and is bounded NE by Delting, E by Tingwall, W by Walls, and on all other sides by the sea. Its utmost length, from N to S, is $13\frac{1}{2}$ miles; its utmost breadth, from E to W, is $8\frac{1}{2}$ miles; and its land area is $62\frac{1}{2}$ square miles, or 39,870 acres. The coast, which in places is bold and rocky, is deeply indented by Gruting, Skeld, Sel, and Sandsound Voes on the S, and by West Burra Firth, Brindister Voe, and Aith Voe on the N. The surface is everywhere hillocky, and, at no point reaching any noticeable elevation or admitting any considerable extent of plain, attains 297 feet in Vementry, 348 at the Ward of Scollan, 457 near the eastern border, 436 at Sand Field, 355 at the Giant's Grave, and 993 at the Ward of Culswick. A perfect network of fresh-water lochs is scattered over the interior, their number being estimated at no fewer than 140 in the *New Statistical Account*. Among the larger are Clousta, Vaara, Hulma, Gossa, Sulma, and Vokterby Lochs, the last of which lies on the Walls boundary. The rocks include red granite in the W, quartzose gneiss, quartzite, hornblende slate, felspar porphyry, syenitic greenstone, etc. The soil, in a few places sandy, in some clay, and in others a light brown mould, is mostly a deep black moss. The arable land lies mostly along the shore. Antiquities are several standing-stones and sepulchral barrows, three or four Scandinavian brochs, and five pre-Reformation burying-grounds. Reawick is the chief mansion. Sandsting is in the presbytery of Olafirith and the synod of Shetland; the living is worth £173. The parish church, built in 1780, contains 437 sittings. There are also Baptist and Congregational chapels; and 7 public schools, with total accommodation for 434 children, had (1893) an average attendance of 249, and grants amounting to £326, 12s. 4d. Valuation (1884) £2678, 5s. 3d., (1893) £2288, 15s. 11d. Pop. (1801) 1493, (1831) 2194, (1861) 2670, (1871) 2806, (1881) 2702, (1891) 2562, of whom 1541 were females.

Sandwick, an Orkney parish on the W coast of Pomona, whose church stands 100 yards from the NE shore of the Bay of Skail, and 5 miles N by W of

SANDWICK

Stromness, under which there is a post office. It is bounded N and NE by Birsay, E by Harray and the Loch of Harray, SE by Stenness and the Loch of Stenness, S by Stromness, and W by the Atlantic Ocean. Its utmost length, from N to S, is $5\frac{1}{2}$ miles; its utmost width is $4\frac{1}{2}$ miles; and its land area is $18\frac{1}{2}$ square miles or 11,827 acres. The coast, $7\frac{1}{2}$ miles in extent, is everywhere precipitous, except at the Bay of Skail, which measures 6 furlongs across the entrance and $4\frac{1}{2}$ thence to its inmost recess, and S of which the Ward Hill rises steeply to a height of 194 feet above sea-level. The western district is somewhat hilly, in the S attaining 342 feet at Crua Breck, 252 at Gyran, and 206 at Linga Field, in the N 305 at Vestra Field; whilst the eastern district slopes gently towards the Lochs of Harray and STENNESS. The Loch of Skail (7×4 furl.) is the largest of seven small fresh-water lakes scattered over the interior. The rocks include granite, flagstone, sandstone, and trap; bog-iron, clay, and marl are plentiful; and moss yields abundance of peat-fuel. To abridge from a recent article by Mr Fringle, 'The parish of Sandwick presents a more fertile aspect than that of Stromness, and a more advanced state of agricultural industry. The manse has a singularly cosy look for an Orkney dwelling owing to the thriving plantation which is growing in front of it. There are about 70 heritors, and the valuation of many of these lairds does not exceed £15 to £20 per annum, whilst some are valued as low as £5 per annum. They are the relics of the old Norse udallers, a class of freeholders once very common in Orkney, but now existing only in some parts of the West Mainland. Hitherto this class has not done much in improving their lands, and their houses and habits are those of the lowest rank of peasantry. If they make a shilling they put it past, and no inducement is sufficient to cause them to part with it. The improved appearance of the parish is owing chiefly to the operations carried on by the late W. W. G. Watt, Esq. of Breckness, who owned fully two-thirds of the parish. Mr Watt's father for many years farmed a large portion of his property, and effected great improvements on it, and the work so begun was carried out on a still more extensive scale by his son. The farms of Skail and Kierfield are as highly improved and well cultivated as if they had been situated in East Lothian, instead of on the N side of the Pentland Firth. These farms are contiguous, but are worked separately. The soil of both farms varies from pure sand to a stiff clay loam, and their extent altogether is upwards of 700 acres.' Near the coast are remains of a large building, the 'Castle of Snusgar,' and other antiquities are standing-stones, vitrified cairns, a cromlech, Scandinavian brochs, a great number of sepulchral barrows, and ruins of a small old church. A large collection of ornaments, ingots, coins, etc. (more than 16 lbs. in weight), was found in 1858 in a sandhill near the N side of the Bay of Skail, and is now in the Edinburgh Antiquarian Museum. This deposit, which was probably the concealed hoard of some of the Scandinavian Vikings of the 10th century, consists of five large penannular ring brooches, having bulbous extremities shaped like thistle-heads, and ornamented with dragoesque tracery on one side and prickly-like ornament on the other; four penannular ring brooches, with flattened extremities and thistle-headed acus; thirteen wreathed neck-rings of silver wires, spirally twisted together, and with recurved ends or hook and eyelet fastenings; an arm-ring, $3\frac{3}{4}$ inches inner diameter, of spirally twisted plaits of silver wire, welded into solid ends, which terminate in dragoesque heads; a flat arm-band of thin metal; an armlet or anklet, penannular in form and triangular in section; twenty-five plain rings of the same form; a quantity of ingots of silver; a quantity of fragments of brooches, rings, etc., which have been purposely chopped into small pieces; seven Cufic coins of the Samanian, and two of the Abbasside Caliphs, dating from A.D. 887 to 945; a coin of Æthelstan, 925, struck at Leicester; and a Peter's Penny, struck at York. The Rev. Charles Clouston, LL.D., eminent as a meteorologist, naturalist,

SANQUHAR

and antiquary, was minister from 1833 till his death in 1884. Sandwick is in the presbytery of Cairnston and the synod of Orkney; the living is worth £178. The parish church, built in 1836, contains 564 sittings. There are a U.P. church of Sandwick (1828) and a Free church of Harray and Sandwick; and Dounby and the North and South public schools, with respective accommodation for 93, 60, and 60 children, had (1893) an average attendance of 78, 41, and 61, and grants of £89, 5s. 6d., £42, 15s., and £77, 18s. 6d. Valuation (1884) £3660, 11s. 1d., (1893) £3325, 6s. 6d. Pop. (1801) 970, (1831) 973, (1861) 1225, (1871) 1153, (1881) 1198, (1891) 1109.

Sandwick, a hamlet, an ancient parish, and a *quoad sacra* parish in the S of Shetland. The hamlet lies on the E coast of Mainland, 13 miles SSW of Lerwick, under which it has a post, money order, and telegraph office. The ancient parish lies around the hamlet, and is now annexed, *quoad civilia*, to Dunrossness. The *quoad sacra* parish, comprehending the ancient parishes of Sandwick and Conningsburgh, is in the presbytery of Lerwick and synod of Shetland. Stipend £120. The church was built in 1807 at the expense of government, and contains 564 sittings. An Established mission church and a Free church are in Conningsburgh; and a Free Church preaching station, a Good Templar lodge, a Rechabite tent, a public school, and a parochial library are in Sandwick. Pop. of *q. s.* parish (1871) 2326, (1881) 2308, (1891) 2114.

Sandwick, a village in Stornoway parish, Lewis, Ross and Cromarty, $\frac{1}{2}$ mile E by S of the town. Pop. (1871) 445, (1881) 525, (1891) 491.

Sandy Knowe. See SMALHOLM.

Sannox. See GLENSANNOX.

Sanquhar, a small town and a parish of Upper Nithsdale, Dumfriesshire. A royal and parliamentary burgh, the town stands 440 feet above sea-level, within 3 furlongs of the Nith's left bank. By road it is 32 miles ESE of Ayr, $18\frac{1}{2}$ SW of Abington station on the Caledonian railway, and 56 SW of Edinburgh; whilst its own station on the Glasgow and South-Western railway (1850) is $26\frac{1}{2}$ miles NNW of Dumfries and $16\frac{1}{2}$ ESE of Cumnock. The main street runs 5 furlongs south-eastward along the Glasgow and Dumfries highroad (1777); and on a rising-ground, at its upper end, stands the parish church (1824; 960 sittings), a handsome edifice with a square tower. This succeeded a building which was remarkable for its size and disproportion, and which, from some sculptured stones in its walls, was supposed to be of great antiquity. At an expansion of the High Street, a short way from its head, is the town-hall, built at the expense of the last Duke of Queensberry, and having a tower and clock; and in 1882 a handsome public hall was erected at a cost of £1500. On a steep bank, overlooking the Nith, about 1 furlong from the foot of the town, stands the picturesque ruin of Sanquhar Castle. This seems to have been a strong quadrangular structure, with towers at the angles. On the N side was a deep fosse with a drawbridge; on the W were gardens, whose site retains traces of a fish pond; on another side was a spacious deer park; and a little way to the SE is the ancient mote of Ryehill. Either the castle, or some fortified predecessor on its site, seems to have given origin, as it certainly gave name, to the town; for 'Sanquhar,' originally and for centuries spelt 'Sancher' or 'Sanchar,' is simply the Celtic *seann-caer*, 'an old fort.' The earliest proprietors of the castle and circumjacent lands, or Lords of Sanquhar, were the Roos, Roose, or Ross family, cadets of the Earls of Ross, Lords of the Isles. Isabel de Ross, daughter and heiress of Robert de Ross, the last of the line, married William de Crichton, who died in 1360; and Sir Robert de Crichton, their great-grandson, was, in 1485, created Lord Crichton of Sanquhar. The sixth Lord, Robert, was hanged at Westminster in 1612 for the murder of a fencing master; and his kinsman and successor, William, first Earl of DUMFRIES, who in 1617 welcomed James VI. to the 'Peel' of Sanquhar, in 1639 disposed of lands, lordship, and castle to William Douglas, Viscount of DRUMLAN-

RIG. The castle became now the seat of the proud Drumlanrig Douglasses. Even after William, first Duke of Queensberry (1637-95), had built the magnificent palace of Drumlanrig, he spent but one night within its walls, and retired for the remainder of his days to Sanquhar Castle. The old pile was forsaken, however, by the second Duke, and abandoned to utter neglect. Plunderers speedily thronged upon it, first to divest it of its leaden roof, next to use it as a quarry, until they left not a vestige of its ancient magnificence except its gaunt but venerable ruin. Excavations carried out in 1876 brought to light several human skeletons and a very deep well with a bucket suspended in it.

Sanquhar rose into considerable prosperity under the fostering care of the third Duke of Queensberry, who, at a cost of £1500, formed for at least 21 miles across his estate, the great line of road which passes through the burgh between Dumfries and the West of Scotland. He also cut, at an expense of £600, a cross road running up Minnick Water to Wanlockhead, and at a cost of £300 a road in the neighbouring parish of Kirkcunel, leading up to a lime-work at Whitecleugh; whilst, jointly with the Trustees for the Encouragement of Manufactures, he gave £40 a year to be distributed among stocking-makers and other manufacturing artificers in the town and its vicinity. The knitting of stockings and mittens, mostly parti-coloured and very various in pattern, long formed a staple manufacture, and afforded a large number of the lower classes a comfortable support; but this industry was extinguished by the outbreak of the American War in 1775, the principal market having been Virginia. Blankets and other woollen goods, however, are manufactured; but brick and tile making, coal-mining, and the manufacture of shovels constitute the leading industries. Sanquhar has a post office, with money order, savings bank, and telegraph departments, branches of the British Linen Co. and Royal Banks, a local savings bank (1819), two hotels, gas and water companies, a bowling and lawn tennis club, a curling club (1774), a social club, a subscription library, a Young Men's Christian Association, a farmers' society, an angling association, and fairs on the first Fridays of February and November (both old style), and on 17th July, if a Friday, otherwise on the first Friday following. Places of worship, besides the parish church, are a Free church (1845), the North U.P. church (1849), of which the Rev. Robert Simpson, D.D. (1792-1867), author of *Traditions of the Covenanters*, etc., was for 47 years minister, the South U.P. church (1742), and an Evangelical Union church (1864). A fund of £2000 was appropriated by the executors of the late James Crichton of Friar's Carse, a native of Sanquhar, for the purpose of erecting and endowing a free school in his native town. Since 1835 the net proceeds of this endowment, after two annual bursaries of £5 and free books to poor children have been provided for, are applied by the School Board to the purposes of higher education.

The 'Corda' of Ptolemy, a town of the Selgovæ, Sanquhar was a burgh of barony from time immemorial, and

was re-erected in 1484. In 1598, at the instance of Robert, sixth Lord Crichton of Sanquhar, it was, by charter of James VI., constituted a royal burgh. The town council consists of a provost, 2 bailies, a dean of guild, a treasurer, and 4 councillors. A grey granite monument, erected in 1860, marks the site of the old town cross, to which were affixed the two famous Sanquhar

witnessing against the usurpation of the government by James VII. Sanquhar unites with DUMFRIES, Annan, Kirkcudbright, and Lochmaben in returning a member to parliament. Parliamentary constituency (1894) 220; municipal, 294. Corporation revenue (1832) £66, (1865) £354, (1884) £280, (1893) £215. Valuation (1885) £4120, (1894) £4314. Pop. (1831) 1527, (1841) 1719, (1851) 2381, (1861) 1754, (1871) 1824, (1881) 1839, (1891) 1815, of whom 695 were females, and 1241 were in the royal burgh. Houses (1891) inhabited 325, vacant 16, building 3.

The parish, which contains also the villages of WANLOCKHEAD and CRAWICK MILL, since 1727 has comprehended great part of the ancient parish of Kirkbride. It is bounded NW by Kirkcunel, NE and E by Crawfordjohn and Crawford in Lanarkshire, SE by Durisdeer, S by Penpont and by Dalry in Kirkcudbrightshire, and W by New Cumnock in Ayrshire. Its utmost length, from ENE to WSW, is 15½ miles; its utmost breadth is 7¼ miles; and its area is 64½ square miles or 41,077½ acres, of which 23½ are water. The NITH flows 2 miles east-south-eastward along the Kirkcunel border, then 5½ miles through the interior; and amongst its numerous affluents the chief are KELLO WATER, running 8½ miles north-eastward along the New Cumnock and Kirkcunel boundary; CRAWICK WATER, running 8 miles south-south-westward along the Kirkcunel boundary; EUCHAN WATER, running 9¼ miles east-north-eastward through the south-western interior; and MINNICK WATER, running 6½ miles west-south-westward through the north-eastern interior. Declining along the Nith, at the point where it quits the parish, to 347 feet above the sea, the surface is everywhere hilly or mountainous. Chief elevations to the NE of the Nith are Dalpedder Hill (1291 feet), *Cairn Hill (1471), *Threepole Height (1802), Brown Hill (1544), Willowgrain Hill (1686), *LOWTHER Hill (2377), Stood Hill (1925), *Wanlock Dod (1808), and Conrig Hill (1591); to the SW *Heathery Hill (1669), Whiteside Hill (1695), Mid Hill (1695), *Corse Hill (1902), and *BLACKLARG Hill (2231), where asterisks mark those summits that culminate on or close to the confines of the parish. The vale of the Nith is here a mimic strath of considerable beauty, flanked by hill-screens which are cleft by little transverse vales, each bringing down its tribute rivulet to the Nith. The rest of the surface is hilly, partly green and partly heathy, exhibiting great diversity of upland character and mountain contour. The rocks of the uplands are nearly all of Silurian formation. A coalfield, extending along the Nith, is supposed to be a wing of the great field of Ayrshire. Extensive lead mines are worked at Wanlockhead; and coal mines, as also quarries of sandstone and limestone, are worked in the carboniferous region. The soil in the vale of the Nith, and in the lower parts of some of the lateral vales, is in general dry and gravelly, and in some places loamy; but that in the other districts is for the most part clayey or mossy, much of it very wet, yet generally deep and well adapted for grazing. Rather less than one-seventh of the entire area is in tillage; nearly 800 acres are under wood; and almost all the rest is pastoral or waste. Castle-Gilmour stood near the right bank of Minnick Water, Kemps Castle on the left bank of Euchar Water; and other antiquities are part of the DEIL'S DYKE running S of the Nith, a crannog in Black or Sanquhar Loch, and remains of barrows, stone circles, etc. The glens and moors were the frequent retreat of the persecuted Covenanters. The Rev. Andrew Thomson, D.D. (1779-1831), an eminent Edinburgh minister, was born in the former manse; and a yet more illustrious native, the 'Admirable' Crichton 1560-c. 1585), was born in ELLIOCK House. The Duke of Buccleuch is the principal proprietor. Since 1861 giving off the *quoad sacra* parish of Wanlockhead, Sanquhar is in the presbytery of Penpont and the synod of Dumfries; the living is worth £438. Three schools—Sanquhar public, Minnick Bridge (Duke of Buccleuch's), and Wanlockhead—with respective accommodation for 392, 66, and 169 children, had (1893) an average attend-



Seal of Sanquhar.

'Declarations'—the first on 22 June 1680 by Richard Cameron, disowning allegiance to Charles II.; the second on 28 May 1685 by the Rev. James Renwick,

ance of 304, 35, and 128, and grants of £313, 16s., £32, 15s. 6d., and £123, 9s. 6d. Pop. (1801) 2350, (1851) 4071, (1871) 3038, (1881) 3109, (1891) 2910—of whom 2165 were in the ecclesiastical parish.—*Ord. Sur.*, sh. 15, 1864. See the Rev. Dr J. Moir Porteous's *God's Treasure-House in Scotland* (Lond. 1876), and James Brown's *History of Sanquhar* (Dumfries, 1891).

Sanquhar House. See FORRES.

Sarclat, a small fishing village in Wick parish, Caithness, 5 miles S of Wick town.

Sark, a small river in the extreme SE of Dumfriesshire. It is formed by the confluence of Woodside or Half-Morton Burn, tracing the northern boundary of Half-Morton, and Hall Burn, out of Canonbie; and it winds 11½ miles in a southerly and a south-south-westerly direction to the head of the Solway Firth. For the first 3½ miles it divides Half-Morton from Canonbie; and afterwards, over a distance of 7½ miles, it divides Half-Morton and Gretna from Cumberland. Its sources lie among the lower declivities of the Eskdale Hills, but by far the greater part of its course is across either a low and beautiful plain or along the skirts of the Solway Moss. It yields fair trout-fishing, but during a comparatively dry summer it almost ceases to exist.—*Ord. Sur.*, shs. 10, 6, 1864-63.

Sark, **The Black**, a rivulet of SE Dumfriesshire, rising at Burnfoot Hill, near Sarkshields, in the parish of Kirkpatrick-Fleming, and flowing south-eastward through that parish, and through Half-Morton and Gretna, to the Sark, ¾ mile above Springfield.

Sauchen, a place in Clunary parish, Aberdeenshire, with a post office under Aberdeen and a branch of the North of Scotland Bank.

Sauchie, an estate, with a mansion and a ruined fortalice, in St Ninians parish, Stirlingshire, 3 miles SSW of Stirling. At the death of his cousin, Mr Ramsay, in 1865, it passed, with BARNTON, to Sir Alexander Charles Gibson-Maitland, Bart., of CLIFTON HALL, whose great-grandfather, the Hon. Gen. Alexander Maitland, received the baronetcy in 1818, and was the fifth son of Charles, sixth Earl of Lauderdale. His son, Sir James Ramsay-Gibson-Maitland, is the present and fourth Bart. (b. 1848; suc. 1876).

The Battle of Sauchie, called also the Battle of Sauchieburn or Stirling, was fought on 11 June 1488, between James III. and his insurgent nobles. The two armies met on a tract of ground, now called Little Caglar, on the E side of the streamlet of Sauchie Burn, about 1½ mile from the field of Bannockburn. The malcontent army was 18,000 strong, and was ranged in three divisions, commanded respectively by Lords Home and Hailes, by Lord Gray, and by officers acting as prompters to the Prince of Scotland, a youth of 15. The King's army is variously stated in strength, and was also disposed in three divisions, commanded (we are not told under what arrangement) by the Earls of Menteith and Crawford, the Lords Erskine, Graham, Ruthven, and Maxwell, and the second Lord Lyndsay of the Byres. The King was armed *cap-a-pié*, and mounted on a spirited grey charger, which Lord Lyndsay had given him that very day, with the assurance that he might at any moment trust his safety to its swiftness and surefootedness, provided only he could keep his seat. The malcontents saw their first line driven back at the onset; but, the second speedily giving support, all became firm and composed; and they soon not only recovered their ground, but pushed the first and the second lines of the royalists back to the third. The King, who was not noted for courage, soon lost the little he possessed; and—previous to the striking of any decisive blow—put spurs to his horse and galloped off, with the view, it is thought, of saving himself in one of Sir Andrew Wood's two ships, which lay in the Forth near Alloa. After the King's flight, his troops continued to fight with great bravery; but eventually finding themselves unable to stand their ground, and disheartened by a flying rumour of the King's death, they began to retreat towards Stirling, and were allowed to retire without much pursuit. The victorious army

lay all night upon the field, and next day marched to Linlithgow. The number of slain on both sides must have been great, as the action was of several hours' duration, and stubbornly maintained; and on the royalists' side it included the Earl of Glencairn and some other persons of high rank. James himself, in his flight, was on the point of crossing the Bannock Burn at the village of Milton, when his horse started at a pitcher which a woman, in the act of drawing water, dropped at the sight of the furious rider. The King was thrown to the ground, and sustained such damage from his fall and the weight of his armour, that he fainted away. He was removed by the miller and his wife into a mill in the immediate vicinity, and treated by them, though ignorant of his rank, with every possible care. When he had somewhat recovered, he told them who he was; and, supposing himself dying, called for a priest. The miller's wife flew in search of a ghostly adviser, and, meeting a party of the malcontents who had observed the King's flight and were tracking his steps, entreated that, if there were a priest among them, he would stop and 'shrive his majesty.' 'I,' said one of them, whose name is not certainly known, 'I am a priest: lead me to him.' Being introduced, he approached on his knees under pretence of reverence, treacherously ascertained that the King thought he would recover if he had the aid of a surgeon, and then stabbed him again and again to the heart. 'Beaton's Mill,' a small old house, with crow-stepped gables, but a mill no longer, is pointed out as the scene of this tragedy. The King was buried in CAMBUSKENNETH Abbey.—*Ord. Sur.*, sh. 39, 1869.

Sauchie, a village in Alloa parish, Clackmannanshire, with a station on the Devon Valley railway, 1½ mile N by E of Alloa, under which it has a post office, with money order, savings bank, and telegraph departments. A church here, built as a chapel of ease in 1841-42, and improved in 1889, was raised to *quoad sacra* status in 1877. A little to the southward lies the village of New Sauchie, now a suburb of Alloa. The population of both villages is largely composed of colliers, for the benefit of whose children there is a Sunday school maintained by an endowment known as Lady Charlotte Erskine's. Pop. of *q. s.* parish (1881) 2985, (1891) 3370.—*Ord. Sur.*, sh. 39, 1869.

Sauchieburn. See SAUCHIE, Stirlingshire.

Saughton, New, or Cammo, a mansion of 1693, with finely wooded grounds, in Cramond parish, Midlothian, 5 furlongs SSW of Cramond Bridge, and 2½ miles WSW of Davidson's Mains.

Saulseat or Soulseat, an ancient parish and an abbey of Wigtownshire. The parish was a vicarage under the monks of the abbey; and, about the middle of the 17th century, it was incorporated with Inch. Its ecclesiastical revenues are divided between the minister of Inch and the minister of Portpatrick. The abbey stood on a peninsula of Saulseat Loch ($4 \times \frac{1}{2}$ to 2½ furl.), in the vicinity of the present manse (1838) of Inch, 3 miles ESE of Stranraer. The building was in ruins in 1684, when Symson wrote his *Description of Galloway*; and it is now commemorated only by some grassy mounds. Its burying-ground contains some curious gravestones, one of them bearing date 1647. The abbey was founded in 1148 by Fergus, Lord of Galloway, for Premonstratensian monks. It was called in Latin *Sedes Animarum* ('souls' seat') or *Monasterium Viridis Stagni* ('monastery of the green loch'); but some have derived its name from its having had one Saul for its first abbot, and so being *Sedes Saulis* ('the seat of Saul'). Chalmers says, 'It was the mother of the more celebrated and opulent priory of Whithorn, as well as of the abbey of Holywood, both of which were planted by monks of the same order. It appears to have been the original establishment of the Premonstratensian monks in Scotland; and the abbots of Soulseat were the superiors of that order in this kingdom.' Its abbacy was one of the few in Scotland the appointment of which remained with the King, and could not be disposed of or controlled by the Pope. The abbey never rose to any eminence or

figured conspicuously in history. In 1568 its abbot, along with some of the most distinguished men of the kingdom, subscribed a bond obliging themselves to defend Queen Mary.—*Ord. Sur.*, sh. 3, 1856.

Scalloway, a seaport village in Tingwall parish, Shetland, 6 miles WSW of Lerwick. Its cottages are of a better description than most in the northern islands; and, arranged round a fine semicircular sweep of bay, they combine with the sea-scene in front, and the old castellated mansion of Scalloway towering above them in the rear, to form a picturesque landscape. The harbour is naturally good, and is supposed to have given to the locality the name of Scalloway, or 'the huts on the bay'—*Skali* signifying 'a booth or shieling,' and *vagr*, transmuted into *vay*, 'a voe or roadstead.' The village was anciently a burgh, and the capital of Shetland. In the 18th century most of the great Shetland landowners had residences here. The great bulk of the present population are fishermen and their families, there being 57 fishing boats belonging to the place in 1894. The inhabitants are industrious and persevering, and the fishermen very fearless. A large quay, warehouses, and a coopers were erected a good many years ago, for the accommodation of the fisheries; and Scalloway has a post office, with money order, savings bank, and telegraph departments, a branch of the Union Bank, a U.P. Church mission station, a Congregational chapel, an Oddfellows' lodge, and a public school. Pop. (1861) 448, (1871) 525, (1881) 648, (1891) 732.

Scalloway Castle, situated above the village, was built in 1600 by Patrick Stewart, the tyrannical Earl of Orkney. A previous mansion of the Earl, at Sumburgh, having given way in consequence of the sandiness of its foundation, the despot compelled the inhabitants, on pain of forfeiting their property, to find as many men as were required for speedily building a new castle, and to supply them gratuitously with provisions; and he superintended and matured the execution of his ignoble plan by means of a military force. The castle, though now a mere shell, exhibits plentiful and distinct indications of its original condition. It is a structure of three storeys, surmounted at each angle by a small round turret. The windows are very large; but the principal door is quite disproportionate and even puny. On the ground floor are an excellent kitchen and vaulted cellars, with a broad flight of ascending steps; and above are a spacious hall and suites of ordinary sized chambers.

Scalpay, or **Scalpay**, an island in the Harris district of the Hebrides, with a post and money order office. It lies at the entrance of East Loch Tarbert, $\frac{1}{2}$ mile from the northern, and 3 miles from the southern, headland. It measures $2\frac{1}{2}$ miles in extreme length, and $1\frac{1}{2}$ mile in extreme breadth; but is much indented, and cut into small peninsulas, by the sea. It is low and heath-clad, and consists of irregular protuberances of gneiss. A bed of serpentine, generally placed at a high angle, and often having a vertical position, traverses a promontory in the extreme E. Near the W extremity of the island are two of the best natural harbours in the Hebrides. At the SE extremity lies Glass Island, with a lighthouse having a fixed white light visible at a distance of 17 miles. Pop. (1841) 31, (1861) 388, (1871) 421, (1881) 540, (1891) 517.

Scalpay, an island of Strath parish, Skye, Inverness-shire, separated from the E coast of Skye by Scalpay Sound or Loch na Cairidh, which, at two points, is less than $\frac{1}{2}$ mile broad. It lies off the mouth of Loch Ainort, and is 7 furlongs SSE of Raasay, $9\frac{1}{2}$ miles SSW of Applecross, and $7\frac{1}{2}$ by N of Kyle Akin. It is of an irregularly oval shape of $4\frac{1}{2}$ by 3 miles; and has the longer axis from NW to SE. Most of its area is occupied by a grassy mountain (994 feet) of uneven summit and rounded outline, displaying much bare rock, yet nowhere marked by asperities or wearing a barren aspect. The descent in most places, but especially along the side towards Skye, comes down in smooth and gentle declivities to the sea, but towards the NE it terminates in bold though not very high

cliffs. The Sound of Scalpay is a noted rendezvous of the herring fleet; and it abounds in oysters, some of which, both fish and shell, are black, while others are of a dingy blue colour. These oysters are supposed to be only a variety of the common species, and to derive their unwonted hue from the dark mud in which they breed. On the island are vestiges of an ancient chapel dedicated to St Francis. Pop. (1841) 90, (1861) 70, (1871) 48, (1881) 37, (1891) 49.

Scalpay Sound. See **SCALPAY**.

Scalspie Bay, a bay ($9\frac{1}{2} \times 5$ furl.) on the SW coast of the island of Bute. It penetrates the boundary between the parish of Kingarth and the parish of Rothesay; and is screened on the N side by a small promontory called Ardsalspie Point (90 feet), $1\frac{1}{2}$ mile ESE of the S end of Inchmarnock.

Scamadale, Loch. See **KILNINVER**.

Scapa Flow, a large expanse of sea interspersed with land in the southern parts of Orkney. Irrespective of lateral recesses and outlets, it measures about 15 miles in extreme length from N to S, 8 miles in mean breadth, and 45 or 47 miles in circumference. In a general view it may be regarded as having Pomona on the N, Burray and South Ronaldshay on the E, the Pentland Firth on the S, the island of Hoy on the W, and the small islands of Cava, Risa, Pharay, Calf, Flotta, Switha, and Hunda in its bosom. In the extreme NW it opens by Hoy Sound, 7 miles in length and 2 in mean breadth, to the Atlantic Ocean; in the NE it opens by Holm Sound, $3\frac{1}{2}$ miles by 2, to the German Ocean; in the middle of the E side it opens by Water Sound, 4 miles by $\frac{1}{2}$ mile, to the same ocean; and in the S it has the island of Swona near the middle of the line where it becomes identified with the Pentland Firth. This isle-begirt sea abounds, in its numerous recesses, with safe roadsteads and fine harbours. The chief is Longhope, in Walls, quite landlocked, capacious enough for the largest fleet, and possessing good anchorage and sufficient depth of water for the largest ship in the British navy; and others are Holm Sound, Widewall Bay, St Margaret's Hope, and Panhope. The tide, at its entering Scapa Flow from the SW, and through the Sound of Hoy, flows with rapidity akin to its current through the Pentland Firth; but it gradually slackens, till its motion becomes scarcely perceptible. At one part of the coast of Graemsay lying in the Sound of Hoy, the current, in consequence of being intercepted by a reef of rocks, runs 9 hours in one direction and 3 in the opposite.

Scarba, an island in the Hebridean parish of Jura, Argyllshire. It lies $1\frac{1}{2}$ mile N of the island of Jura, and $3\frac{1}{2}$ miles WNW of Craignish Point on the mainland. Its length is $3\frac{1}{2}$ miles, and its greatest breadth is $2\frac{1}{2}$; but its mean breadth is much less. Most of it consists of a single mountain of an oblong conoidal form, which towers aloft to a height of 1500 feet, and is conspicuous at a distance as much for its outline as for its altitude. The shores on the S, the W, and the N are generally high, rocky, and precipitous, and in some places consist of a perpendicular face or sheer fall of several hundred feet of the mountain. All these shores and the high grounds, wherever not quite naked, are for the most part covered with heath. But the E side of the island is eminently beautiful; it recedes in a semi-circular curvature from the sea, so as to enclose a fine bay in a magnificent amphitheatre; it rises up along the seaboard with a uniform and quite practicable acclivity; it has a subsidiary and comparatively low ridge of rising ground along the skirt of the interior mountain; it is sheeted over with verdure and with natural woods, occasionally interrupted by projecting rocks; and in all the magnificent sweep of its recess from the bay, it commands a view of the variegated and intricate channel of the Slate islands, with the sound of Oban, and the distant ranges of mountains that extend from Ben Cruachan to Ben Nevis. Quartz rock, dipping towards the E in angles of 40 or 50 degrees, forms the principal body of the mountain; but it alternates with and passes into micaceous schist; and both it and the

varieties which the intermixture with it of the micaceous schist produces, alternate with clay-slate. The island belongs to F. C. T. Gascoigne, Esq. of Craignish, and is under deer. Scarba (Norse *Skarpey*) is the Eugaricenna of Ptolemy, and one of his five Ebudæ. Pop. (1861) 13, (1871) 7, (1881) 19, (1891) 9.

Scare, Big and Little. See LUCE BAY.

Scarferry, a fishing village in the NE corner of Dunnet parish, Caithness, on the coast, $7\frac{1}{2}$ miles NE of Castletown. It has a post office under Thurso. In 1894-95 a pier 238 feet long, and composed of Portland cement concrete, was constructed for the purpose of providing a sheltered haven for the fishing boats, the inclosed area having previously been excavated. The sea end of the pier, for a distance of 100 feet, slopes downwards for $4\frac{1}{2}$ feet above high water to 6 feet below low water. The cost of the undertaking was £1000, of which Government gave £800.

Scarp, an island in the Hebridean parish of Harris, Inverness-shire, $\frac{1}{2}$ mile W of the nearest point of North Harris. Its length north-westward is 3 miles; and its greatest breadth is $2\frac{1}{4}$ miles. It consists chiefly of one mountain of gneiss rock, with little soil, and rising to an altitude of 1000 feet above sea-level. Pop. (1841) 129, (1861) 151, (1871) 156, (1881) 213, (1891) 143.

Scarsburgh. See JEDBURGH.

Scar Water, a troutful rivulet of Nithsdale, Dumfriesshire, rising within $1\frac{1}{4}$ mile of the meeting-point of Dumfries, Kirkcudbright, and Ayr shires, at an altitude of 1600 feet, and flowing $18\frac{3}{4}$ miles east-south-eastward—for the first $11\frac{1}{2}$ miles through PENPONT parish, and then along or close to the boundaries of Tynron and Keir—till, after a descent of 1420 feet, it falls into the Nith at a point 2 miles S by W of Thornhill.—*Ord. Sur.*, shs. 15, 9, 1864-63.

Scatwell, a mansion in Contin parish, Ross and Cromarty, on the right bank of the Conan, near the Meig's influx, 10 miles WNW of Muir of Ord station on the Highland railway. Its owner is Sir William J. Bell, who purchased the estate in 1888.

Seavaig, Loch, a remarkable inlet of the sea, a scene of wild and dismal grandeur, on the SW coast of Skye. It measures $4\frac{1}{2}$ miles across the entrance, and 3 miles thence to its inmost recess; and it penetrates among the Cuchullin Mountains. Its flanks are stupendous heights of bare rock, which shoot abruptly up from the bosom of the sea, and, being composed of hypersthene, have a singularly dark and metallic aspect. 'But,' says Dr Macculloch, who brought this remarkable piece of scenery into notice, and is the fittest person to describe it, 'it is impossible to convey any idea of this spot, which before my visit had never been seen by a stranger, and was indeed known to few, even of the inhabitants of Skye. Scarcely any but shepherds had trod these sequestered retreats, the dwelling of clouds and solitude; fit haunts for the poetical demons of the storm. Loch Seavaig is inaccessible by land on the N side, and equally so on the S, to all but the active and practised mountaineer. The traveller whose object is picturesque beauty, should enter it from Strathaird. In this direction the view from the sea is extremely fine, the dark ridge of the Cuchullin, with all its spiry and serrated projections, flanked by the equally dark and lofty ridge of Blaven, forming a varied and rugged outline of the sky. On entering the bay, these summits disappear, as they retire below the high skirts of the hills which descend into the sea, varied by projecting points and rocky islets, and surrounding the spectator with a continuous surface of bare and brown rock, scarcely presenting a symptom of vegetation. The falling of a cascade, the deep dark green of the water, and the wheeling flight of the sea-birds that frequent this retired spot, are the only objects which vary the uniformity of colours and of character it everywhere displays. On landing, similar scenes meet the eye in every direction, no intruding object occurring to diminish the effect produced by the gloomy grandeur and savage aspect of the place.' See CORUIK and CUCHULLINS.

Schaw Park, a seat of the Earl of Mansfield, in Alloa parish, Clackmannanshire, $2\frac{1}{2}$ miles NNE of the town. It is a fine mansion, and commands a wide and beautiful prospect.

Schel. See MOREBATTLE.

Schiehallion, an isolated mountain of Perthshire, on the mutual border of Forthingall and Dull parishes, $4\frac{1}{2}$ miles SE of Kinloch-Rannoch, and 11 WNW of Aberfeldy. Its altitude above sea-level is 3547 feet. It is situated at the eastern entrance of the district of Rannoch, a little detached from the long ridge of 7 miles breadth at the base, and 3000 feet or upwards in mean elevation, which divides Rannoch from the vales of Glenlyon and Forthingall; and, seeing on entering the country by any approach from the Lowlands, it has a conspicuous and commanding appearance. Viewed from the NW, it seems a cone; but viewed from the S or E, it is seen to be elongated eastward and westward, to rest on a long narrow base, to rise gently at its E end, and to be steep on the W and on the S side. Its outline is, on the whole, curvilinear, and has fewer angles and breaks than that of most of the monarch-heights of the Highlands. The view from its summit promises, *a priori*, to be magnificent; but, when actually seen, it greatly disappoints. The valley of the Tummel is sufficiently remote to appear trifling; Loch Rannoch seems strip of its attractions, and sinks into comparative tameness; Glenlyon is shut out by the interposed mountain-range; and all else is a tumultuous sea of wild elevations, among which the eye traces few striking forms. Schiehallion is known throughout the scientific world as the scene, in 1774, of curious observations by Dr Nevil Maskelyne, astronomer-royal, to ascertain the mean density of the earth by observing the effect of the mountain on the plumb-line; and it afterwards acquired additional celebrity from the visit and notices, first of Dr Playfair, and next of Dr Macculloch. The name is said to be a corruption of the Gaelic *Ti-chailtinn*, 'the maiden's pap.'—*Ord. Sur.*, sh. 55, 1869.

Schivas. See TARVES.

Scone, a parish containing the hamlet of Old Scone and the town of New Scone, in the SE of Perthshire, on the E bank of the river Tay. The district at West Kinnochtry, containing 717½ acres, and shown on the Ordnance Survey maps as a detached part of this parish, but alleged to be a part of Kettins parish in Forfarshire, was transferred by the Boundary Commissioners in 1891 to the parish of Cargill. There was effected at the same time a change of territory between the parishes of Scone and Kinnoull. So much of the Balthayock detached part of the latter parish as lay on the north side of the public road running past Two-mile House and Balcarra was transferred to the parish of Scone, while so much of Scone parish as lay on the south of the same road was transferred to Kinnoull. The parish of Scone is bounded N and NE by the parish of St Martins, E by the parish of Kilsplindie, SE by the parish of Kinnoull, SW by the parishes of Perth and Tibbermore, and W by the parish of Redgorton. On the W the boundary line follows the Tay for $4\frac{1}{2}$ miles, and elsewhere it follows the courses of two of the burns for a short distance, but it is mostly artificial. The length, from Colen Wood on the N to the point on the river Tay where the parishes of Kinnoull, Perth, and Scone meet on the S, is $3\frac{1}{2}$ miles; and the extreme breadth, from the point on the E where the parishes of St Martins, Kilsplindie, and Scone meet, near Blackcraigs, to the bend of the Tay at the NW corner of the policies of Scone Palace on the W, is 5 miles. The surface rises in gentle undulations from the Tay towards the eastern boundary, where it attains an extreme height of over 500 feet. The whole is fertile and well cultivated, and there are numerous belts and clumps of trees. The prevailing rocks are basalts and sandstones, both of which are quarried. Along the W side near the Tay is a strong rich clay, elsewhere the soil varies from good deep black loam to a light sandy gravel. The drainage is carried off by the Tay and some small burns flowing into it. Of these the chief are one in the N at Stormontfield,

one flowing from Muirward Wood farther S, two flowing through the policies of Scone Palace, and one to the S of New Scone, flowing through the Den of Scone. The principal antiquities are two stone circles, each about 21 feet in diameter, in the SE of the parish—one to the WNW of the town of New Scone, and the other about 1 mile to the NE near Shianbank; a cairn in the N near Barclayhill House; traces of a reach of Roman road which, coming from Ardoch, crosses the Tay at Derrders Ford, W of the palace of Scone, and passed in a straight line N by E till it left the parish near Colen; remains of a Roman camp on this road, N of the Palace policies; and the site of an old fortification called Gold Castle in the NW of the Palace policies. The old palace and the Mote Hill are subsequently noticed. The great Earl of Mansfield (1705-93), being one of the Stormont family, was connected with the parish though born at Perth, and Scone was itself the birthplace of David Douglas (1799-1834) the traveller and botanist. The parish is traversed by the roads from Perth to Blairgowrie, Coupar-Angus, and Newtyle. Scone contains the hamlet of Old Scone, the town of New Scone, the village of Stormontfield, and a small part of the burgh of Perth. The chief residences are Scone Palace and Bonhard House, the latter the seat of Alexander Macduff, Esq. The Earl of Mansfield is the principal landowner.

The parish is in the presbytery of Perth and the synod of Perth and Stirling; and the living is worth £404 a year. The churches are noticed under the town. Under the School Board the New Scone and Stormontfield schools, with respective accommodation for 311 and 59 pupils, had (1893) an average attendance of 238 and 24, and grants of £260, 11s. and £32, 12s. Valuation (1885) £14,414, 3s. 6d., (1892) £12,653, 12s. 8d. Pop. (1801) 1670, (1831) 2268, (1861) 2199, (1871) 2240, (1881) 2347, (1891) 2150, of whom 984 were males and 1166 females, and 2100 were in the landward part of the parish. Houses (1891) in landward part inhabited 501, uninhabited 46, and building 2.—*Ord. Sur.*, sh. 48, 1868.

The town of New Scone is near the centre of the southern part of the parish, on the road from Perth to Blairgowrie, 2 miles NE of Perth. Occupying a fine airy position well sheltered on the E, it dates from the beginning of the nineteenth century, and its houses are mostly neat substantial buildings. There is a post office under Perth, with money order, savings bank, and telegraph departments, a public hall and reading-room, a public school, a cemetery, and Established, Free, and U.P. churches. The public hall is a Romanesque building, erected in 1879-80 at the junction of Albert and Coupar-Angus roads, and the hall has accommodation for 400 persons. The school, Elizabethan in style, was opened in March 1876. The parish church was erected in 1804 and enlarged in 1834. The U.P. church was built in 1810. A monument to the memory of David Douglas, already mentioned, has been erected by his fellow-townsmen. The unfortunate naturalist met his death in the Sandwich Islands by falling into a pit the natives had made for ensnaring wild beasts. Pop. of town (1841) 1864, (1861) 1403, (1871) 1477, (1881) 1483, (1891) 1329, of whom 583 were males and 746 females. Houses (1891) inhabited 341, uninhabited 36, and being built 2.

The hamlet of Old Scone, $1\frac{1}{2}$ mile to the WNW, has disappeared, all that remains of it being a fine old cross surrounded by stately trees; but the site is interesting from its connection with old Scottish history. As has been aptly remarked, 'There are many instances of towns losing their market crosses, but this is the only cross which has lost its town.' In the early part of the 8th century we find Scone appearing as the capital of Pictavia, one of the four kingdoms into which modern Scotland was then divided. Occupying a position between the two divisions of the Northern and Southern Picts, it seems to have become naturally the central point of the Pictish government, and in 710 it appears to have been here, at the Mote or Bote Hill that

Naitan, King of the Picts, publicly 'renounced the error by which he and his nation had till then held, in relation to the observance of Easter, and submitted, together with his people, to celebrate the Catholic time of our Lord's resurrection,' and it was probably from this that the mound acquired its name of Caislen Credi or Castle of Belief. This change in the date of the keeping of Easter led to the expulsion of the Columban missionaries, who had exercised ecclesiastical sway within the Pictish territories for over a century, and so caused the quarrel between the Picts and Dalriadic Scots that afterwards, in 844, led to the union of Dalriada and Pictavia under Kenneth Mac Alpin. Under Kenneth it remained the capital of the kingdom, and appears too as the place of keeping of the famous Stone of Destiny, which is traditionally said to have been brought by this monarch from Dunstaffnage. This myth represents it as having been the stone which Jacob used as a pillow at Bethel, but which, having passed into the possession of Scots, daughter of Pharaoh, who married Gaythelos, son of the King of Greece, and contemporary with Moses, was by her carried first to Spain, then to Ireland, and ultimately to Dalriadic Scotland, being all this time a sort of talisman for the owners, and held in high reverence as their *viagfair* or stone of destiny, as set forth in the old rhyme—

'Ni fallat fatum, Scotti, quocunque locatum,
Invenient lapidem, regnare tenentur ibidem;'

or, as Bellenden has rendered it—

'The Scottis sall bruke that realme, as natyve ground
(Geif weirdis fayll nocht) quhair evir this Chair is found.'

Wyntoun, in telling the story, says that the stone was brought to Ireland* by Simon Brec, son of the King of Spain, and that it was afterwards by Fergus-Erson transferred to Iona, and thereafter to Scone; while the *Rhyming Chronicle* makes Simon Brec the son of Milo, King of Spain, who did not live till more than a thousand years after Pharaoh's time, and all the later chroniclers agree that the stone was finally transferred to Scone by Kenneth Mac Alpin, when he united the Picts and Scots under one sovereignty. Such is the rough tradition, but Dr Skene has shown that for its later more polished forms, and for the identification of the mystic stone with that at Scone, we are indebted to Baldred Bisset, who was one of the commissioners sent to Rome to plead the cause of Scottish independence before the Pope, and who was desirous of thus strengthening his cause. That the stone was looked on as mystical, and held in high reverence, is undoubted, though the reason cannot now be definitely ascertained. Dr Joseph Robertson supposed that it might have been brought from Iona, and was possibly the stone used by Columba as a pillow, but the block is of no rock found in that island, and is indeed a mass of dull reddish or purplish sandstone, with a few embedded pebbles, and having as much resemblance to the sandstones of the neighbourhood as to any other deposits. Dr Skene thinks that in all probability it was a stone used by St Boniface—an Irish missionary who was concerned in the conversion of Naitan and his people to the Roman method of calculating Easter—as an altar, and hence the veneration; and he points out that a stone on which the kings of Munster were seated when crowned was believed to be the stone altar used by St Patrick in his service after the conversion of the king of Cashel. There seems to be a difference between both the Scone and Munster stones and those used in the common Celtic custom of inaugurating kings while they stood on some rock or large stone, for both of the former slabs were movable and were kept in churches. After the kingdom of Scone passed into the kingdom of Alban in A.D. 900, Scone still remained the capital, for in 906, when the Mote Hill was the scene of a solemn assembly where King Constantin and Cellach, Bishop of St Andrews,

* It is a curious fact that while the Scottish stone was said to have been brought from Ireland, the Irish stone of Tara was, according to tradition, brought from Scotland.

resolved on a union of the Pictish and Scottish Churches, it is spoken of as *regalis civitas*, and from this time onwards the same hill was frequently the meeting place of rough parliaments. In 1054 a battle was fought in the neighbourhood between the forces of Siward, Earl of Northumbria, and Macbeth. Siward was the uncle of Malcolm Ceanmor, and, anxious to place his nephew on his rightful throne, he 'went with a large army into Scotland, both with a naval force and a land force, and fought against the Scots, of whom he made great slaughter, and put them to flight, and the king escaped.' The struggle was, however, so keen, and so many of Siward's men were killed, that he had to retire, and Macbeth's rule over Scotia was maintained for other three years. From the reference to a naval force, Siward would seem to have brought ships, which operated along the Tay.

After the kingdom of Alban became the kingdom of Scotia, and still later, when Celtic finally passed into feudal Scotland, neither the importance of the place nor of its mystic stone diminished. 'No king,' says Fordun, 'was ever wont to reign in Scotland unless he had sat upon this stone at Scone,' and this may possibly have been so, though there is no contemporary evidence of the fact prior to the 12th century, when John of Hexham states that in 1153* Malcolm IV. was crowned here, and from this time onwards Scone was the regular place of coronation till the beginning of the reign of James IV. Subsequent to that time the only king who was crowned at Scone was Charles II. in 1651. Of most of the ceremonies no particulars have been recorded, but of that of Alexander III. a graphic account has been given by Fordun, and of that of Charles a full account is given in a thin quarto printed at Aberdeen in 1651, and reprinted by Dr Gordon in his *Monasticon* (London, 1875). The last king crowned seated on the mystic stone was Alexander III., as the relic was in 1296 carried off to London by Edward I., who, much given to relic worship, seems to have held it in as high esteem as the Scots themselves, and evidently regarded it as the palladium of Scotland. His first intention was to make for it a magnificent shrine, which was to serve as a coronation chair for the English kings, but this idea was abandoned in favour of that of a chair of bronze, and then of one of wood, which has been used as a coronation chair for all the English and British sovereigns since, and underneath the seat of which the stone still remains. Some doubt was at one time expressed as to whether this stone at Westminster is that formerly at Scone, because in the treaty of Northampton in 1288, it was stipulated that the relic should be given back. Complaint is, however, afterwards made that the stipulation had not been fulfilled, and there cannot be the slightest question as to the identity. The Abbey of Scone stood to the W of Old Scone on the site of the present palace. It was founded by Alexander I. in 1114 for Augustinian monks, whom he brought from the priory of St Oswald at Nostal, near Pontefract in Yorkshire. The new foundation was dedicated by Alexander and his wife Sibylla to the Virgin, St Michael, St John, St Lawrence, and St Augustine; and it seems to have replaced an older church dating from the time of St Boniface, and dedicated to the Holy Trinity. During the Wars of Independence the monks of Scone were, like so many of the Scottish churchmen, thoroughly opposed to the English claims, and so we find their home destroyed by the English army in 1298, and Edward petitioning the Pope to take the Abbey out of the midst of a hostile population, while, later, Abbot Thomas was one of those who took part in the coronation of Robert Bruce and suffered in consequence, being sent to England as a prisoner. The Abbey possessed a precious relic in the head of St Fergus (*circa* 700), for which James IV. provided a silver case. From traces which have been observed of its foundations, the abbey wall is supposed to have enclosed an area of

12 acres. About 100 yards due E from the SE corner of the present palace is an old burying ground, and here in 1841 part of the abbey buildings were laid bare. The church is supposed to have stood here. About 70 yards N of this is the Mote Hill—'the hill of belief' of the chroniclers, and the Mons Placiti of the *Regiam Majestatem*; Gaelic, *Tom-a-mhoid*, 'the hill where justice is administered'—with a flat area on the top of 100 by 60 yards. The Abbey buildings and the old palace, properly the house of the abbots, were destroyed by a mob from Perth in 1559. 'Some of the poore in houp of spoyle, and sum of Dundie to consider what was done, passed up to the same Abbey of Scone; whairat the Bischopis servandis, offended, began to threatene and speak prouddie; and as it was constantlie affirmed one of the Bischopis sonis stogged thruch with a rapper one of Dundie, for because he was looking in at the girnell door. This brute noysed abrode, the town of Dundie was more enraged than befor, who, putting thame selfis in armour, send word to the inhabitantis of Sanct Johnestoun, "That onles they should support thame to avenge that injurie that that should never after that day concur with thame in any action." The multitud, easilie inflamed, gave the alarme, and so was that Abbey and Palace appointit to saccage; in doing whairof they took no lang deliberation, bot committed the hole to the merciment of fyre; wharat no small number of us war offendit, that patientlie we culd nocht speak till any that war of Dundie or Sanct Johnestoun.' So complete was the destruction, that hardly any ruins even remained. The building of a new palace was begun by the first lay commendator, the Earl of Gowrie, and on his forfeiture the property was bestowed by King James VI. on David Murray of the house of Tullibardine, who became Baron Scone in 1605, and Viscount Stormont in 1621. He finished the palace and erected the old gateway 200 yards to the NE of the present mansion. The old abbey church having fallen, he also, in 1624, erected a parish church on the top of the Mote Hill. Of this only an aisle now remains, containing a magnificent marble statue of the first Viscount, and other family monuments. During the January of 1716 the Chevalier St George lived here for about three weeks 'in all the grandeur of an English King,' dining and supping alone and being served on the knee by the lord of the bedchamber in waiting. Prince Charles Edward also visited the house in 1745. After the succession of the Stormonts to the Mansfield title the old palace seems to have dissatisfied them, and a new mansion-house, the present Palace of Scone, was erected in 1803-8 at a cost of £70,000. It is a castellated edifice, somewhat heavy and cumbersome, but contains many fine paintings, and the greater part of the old furniture and furnishings have been preserved, including a bed that belonged to James VI., and another, the hangings of which were worked by Queen Mary when a prisoner in Loch Leven Castle. The music gallery occupies the site of the old great hall where the coronation ceremonies took place. The situation is pleasant, on an extensive lawn sloping gently up from the Tay; and the well-wooded and beautiful grounds known as Scone Park stretch along the river for about 2 miles. Among many noble trees may be noticed Queen Mary's sycamore, and an oak and another sycamore, both planted by James VI. The Queen and Prince Albert here spent the night of 6 Sept. 1842. In the grounds is the old cross of Scone—a narrow pillar, 13 feet high, with a sculptured top—the original position of which was about 80 yards E of the ancient gateway already mentioned. Scone Palace is the seat of William David Murray, present and fourth Earl of Mansfield, ninth Viscount Stormont and Baron Scone (b. 1806; suc. 1840). See COMLANGAN and SCHAW PARK.

See also the *Liber Ecclesie de Scon* (Edited by Cosmo Innes for the Bannatyne and Maitland Clubs in 1843); Skene's *Coronation Stone* (Edinb. 1860); his *Celtic Scotland* (Edinb. 1876-80); Urquhart's *History of Scone* (1884); chap. viii. of Thos. Hunter's *Woods and Estates of Perthshire* (Perth, 1883); and for the burning of the Abbey, Knox's *History of the Reformation*.

* Dr Hill Burton's statement that Malcolm III. was crowned at Scone has been traversed by Dr Skene. See *Celtic Scotland*, vol. i., p. 431.

Scoonie (anciently *Scunry*), a parish on the S coast of Fife, containing the post-town and railway station of LEVEN. It is bounded N by Ceres, E by Largo, SE by the Firth of Forth, S by Wemyss, SW by Markinch, W by Kennoway, and NW by Kettle. Its utmost length, from N to S, is $4\frac{1}{2}$ miles; its breadth varies between 5 furlongs and $2\frac{1}{2}$ miles; and its area is 4286 $\frac{1}{2}$ acres, of which 184 $\frac{1}{2}$ are foreshore and 10 $\frac{1}{2}$ water. The shore, $1\frac{1}{2}$ mile in extent, is flat and sandy, and east of the town of Leven is skirted by Scoonie Links. The river Leven flows $1\frac{1}{2}$ mile east-by-southward along all the southern boundary to Largo Bay; a burn, coming in from Kennoway, runs eastward and south-by-eastward through the interior to the bay; and a copious spring, called the Boiling Well, rises in a sandy flat a little way from the beach. The surface rises gradually northward to 200 feet near Springfield, 380 near Toddy Bridge, and 600 near Kilmux Wood in the extreme N; and the higher grounds command an extensive and brilliant view of the Firth of Forth and the Lothians. Beds of coal of various thickness lie beneath all the surface, and have long been worked. The soil is variable; but nearly nine-tenths of the entire area are in tillage, whilst over 260 acres are under wood. A tumulus on the Aithernie estate in 1821 was found to contain about twenty stone coffins, in which were various urns. Numerous uncoffined bones were also found. Of Aithernie Castle only a fragment now remains. The chapman-scholar, Jerome Stone (1727-57), was the son of a Scoonie mariner. Mansions, noticed separately, are DURIE, KILMUX, and MONTRAVE. Scoonie is in the presbytery of Kirkcaldy and the synod of Fife; the living is worth £410. The old parish church, in the centre of the burying-ground, $\frac{1}{4}$ mile distant from Leven, is now reduced to a fragment, which serves as the family vault of the Durie property. The present churches have been described under Leven. Two public schools, Leven and Smithy Green, with respective accommodation for 1197 and 65 children, had (1893) an average attendance of 868 and 52, and grants of £867, 12s. 10d. and £55, 10s. Valuation (1885) £19,044, 0s. 11d., (1893) £21,895, 6s. 9d. Pop. (1801) 1681, (1831) 2566, (1861) 3257, (1871) 3178, (1881) 3730, (1891) 4693.—*Ord. Surv.*, sh. 40, 1867.

Scotlandwell. See PORTMOAK.

Scotsbrig, a farm in Middlebie parish, Dumfriesshire, 3 miles NE of Ecclefechan. It became the home of the Carlyle family in 1826.

Scotsburn. See LOGIE-EASTER.

Scotsraig, a large substantial mansion of 1817, in Ferry-Port-on-Craig parish, NE Fife, 1 mile SW of Tayport. The estate at an early period belonged to the bishops of St Andrews, by one of whom it was feued during the first half of the 13th century to Sir Michael Scott of Balwearie, father of the famed Sir Michael Scott, with whose descendants the lands for some time continued. It was in consequence of this that they came to be denominated Scotsraig. From the family of Scott, Scotsraig came by purchase to Durie of that ilk, from whom it passed to the Ramsays, ancestors of the Earl of Dalhousie. It afterwards belonged to the Buchanans, then to the Erskines; and during the reign of Charles II. the whole estate became the property of Archbishop Sharp, from whose successors it was purchased by Mr Alexander Colville, the representative of the Lords Colville of Culross. From this family the lands were afterwards purchased by the Rev. Robert Dalgleish, D.D., who was minister and proprietor of the whole parish. The present proprietor is William Maitland-Douglas.—*Ord. Surv.*, sh. 49, 1865.

Scots Dyke, The, an old ditch and embankment $3\frac{1}{2}$ miles in length, forming part of the march-line between England and Scotland. It struck off abruptly from the Esk at a point 4 miles to the N of Longtown, and ran W to the banks of the Sark, which, flowing southward to the Solway Firth, from the point of contact with the Scots Dyke to its efflux in the Solway forms the boundary of the two countries. The small district situated S of the Scots Dyke, and bounded on the E by the Esk and on the W by the Sark, used formerly to be known as

the Debatable Land, and was claimed by both kingdoms.—*Ord. Surv.*, shs. 11, 10, 1863-64.

Scotstarvet Tower, a square, battlemented tower in CERES parish, Fife, $2\frac{1}{2}$ miles S by W of Cupar. Standing on an eminence, it is 24 feet square, and 50 to 60 feet high, commands a fine view, and itself is widely conspicuous.—*Ord. Surv.*, sh. 40, 1867.

Scotstown, a village of Sunart district, Argyllshire, 2 miles N of Strontian.

Scourie, a village in EDDRACHILLIS parish, W Sutherlandshire, at the head of a small bay of its own name, $4\frac{1}{2}$ miles NW of Lairg, under which it has a post office, with money order, savings bank, and telegraph departments, and with which it communicates by a daily mail-gig. The township, except where it looks out upon the bay, is quite surrounded by an amphitheatre of rugged ledges of rock; and the land is comparatively verdant and arable, in fine contrast to the sterile and rocky surface of the mountain-screens. Scourie Bay is $7\frac{1}{2}$ furlongs in length by 5 across the entrance, and opens upon the romantic island of Handa. In the 16th century a branch of the Mackays took possession of the south-western part of what came to be called Lord Reay's Country, and, adopting Scourie as the seat and centre of their influence, assumed the designation of the Mackays of Scourie. One of this race was Lieutenant-General Hugh Mackay, the celebrated commander-in-chief in the reign of William and Mary. He was to have been ennobled by the title of Earl of Scourie, but lost favour at court through the intrigues of his rival, Mackenzie of Cromarty.—*Ord. Surv.*, sh. 107, 1881.

Scour-na-Lapaich. See MONAR, LOCH.

Scrabster, a seaport and suburb of Thurso, Caithnessshire, on the westward expansion of the upper part of Thurso Bay, and near the eastern entrance to the Pentland Firth. Of considerable importance as a fishing station, and the accommodation available for the large fishing fleet which regularly prosecutes the herring fishery having been found to be totally inadequate for the purpose, its harbour was considerably extended in 1893-94, this extension being the first part of a larger scheme which the harbour trustees intend to carry out as funds are available. The Western Highlands and Islands Commission in 1894 recommended that £3000 be given in aid of these works. The value of herring, all of excellent quality, landed at Scrabster in 1893 exceeded £30,000. It has a post office under Thurso, and near at hand are vestiges of Scrabster Castle, once a residence of the bishops of Caithness, and afterwards a fortress of the crown.

Scrape, The, a rounded mountain (2347 feet) on the mutual border of Manor and Drummelzier parishes, Peeblesshire, 7 miles SW of Peebles. It consists of greywacke veined with quartz, and commands an extensive and interesting prospect. Along its top are traces of a road which is supposed to have been Roman, and which probably connected the camp at Lyne with the great road from Carlisle up Annandale and down Lanarkshire.—*Ord. Surv.*, sh. 24, 1864.

Scrosset, Loch. See RUM.

Scriden Rocks. See ARRAN.

Scroggiehill, a village in Methven parish, Perthshire, 4 miles WNW of Perth.

Scur of Eigg. See EIGG.

Scullamie. See KYLE OF TONGUE.

Seacliff House, a mansion in Whitekirk parish, Haddingtonshire, near the coast, $4\frac{1}{2}$ miles E by S of North Berwick. Scottish Baronial in style, it was rebuilt by the late Mr Sligo, and enlarged by John Watson Laidlay, Esq., who acquired the estate in 1850, and whose son Andrew is present proprietor.—*Ord. Surv.*, sh. 41, 1857. See J. Small's *Castles and Mansions of the Lothians* (Edinb. 1838).

Seafeld House, a mansion in Ayr parish, on the right bank of the estuary of the Doon, the property of Sir William Arrol, and erected by him in 1892.

Seafeld Tower. See KINGHORN.

Seafeld Tower, a mansion in Ardrossan parish, Ayrshire, near the coast, $1\frac{1}{2}$ mile N by W of the town.

Built in 1820, and greatly enlarged and improved in 1858, it is a chateau-like edifice in a pleasing combination of the Scottish Baronial, Jacobean, and Italian styles, and is now used as a hydropathic establishment.—*Ord. Sur.*, sh. 22, 1865. See A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1855).

Seaforth, Loch, a projection of the sea on the E coast of the island of Lewis. It is $\frac{3}{4}$ miles wide at the entrance, and, striking north-westward for $8\frac{1}{2}$ miles, diminishes gradually to a breadth of 1 mile; it then bears $5\frac{1}{2}$ miles north-north-eastward, its breadth contracting from $2\frac{1}{2}$ miles to $\frac{1}{4}$ mile, and embosoms to the S an island, Eilean Shithford ($\frac{1}{4}$ mile $\times$ $6\frac{1}{2}$ furl.; 600 feet high); and it finally goes off in two arms—1 mile westward and 3 miles eastward, with a maximum breadth of $\frac{1}{2}$ mile. Over the first $8\frac{1}{2}$ miles it divides Lewis from Harris, and over the rest of its length it penetrates the Lewis parish of Lochs. The mountains around its entrance rise to a great height, and, together with much grandeur of outline, form groups of highly-picturesque composition. In all the narrow or central and upper part, the loch, being environed with lofty ground, and forming a stupendous natural canal, is gloomy, sequestered, and silent; and in its lower part, though frequented by shipping, it is subject, from the clefts of the surrounding mountains, to sudden squalls and gusts, which render its anchorage not altogether safe. At a shoal $3\frac{1}{2}$ miles above Eilean Shithford the current of a spring tide runs at the rate of 8 miles an hour, and makes a noise which, in calm weather, can be heard at a distance of several miles. This shoal cannot be passed by boats except near high water. Seaforth gave the title of Earl to a branch of the family of Mackenzie, created Baron Mackenzie of Kintail in 1609, and Earl of Seaforth in 1623. The earldom became attainted, in 1716, in the person of William, the fifth Earl.—*Ord. Sur.*, sh. 99, 1858.

Seal Island. See ELLAN-NAN-RON.

Seamab Hill. See MUCKHART.

Seamill. See KILBRIDE, WEST.

Sea Park, a good modern mansion, with beautiful grounds, in Kinloss parish, Elginshire, $\frac{1}{4}$ mile W by N of Kinloss station, and $2\frac{1}{2}$ miles NE of Forres. The estate belonged to the Ellisons from 1574 till 1800, and in 1838 was purchased by the late John Dunbar, Esq.—*Ord. Sur.*, sh. 95, 1876.

Seaton. See SETON.

Seggieden, a mansion, with finely wooded grounds, in Kinnoull parish, Perthshire, near the left bank of the Tay, 4 miles ESE of Perth. Its owner is Colonel Drummond Hay.—*Ord. Sur.*, sh. 48, 1868.

Seil, an island of Kilbrandon and Kilchattan parish, Argyllshire, lying $3\frac{1}{4}$ miles S by W of Kerrera, and 4 SE of Mull. It is separated on the E by a very narrow strait from the mainland district of Nether Lorn; on the S by sounds only 2 or 3 furlongs broad from Torsa and Luig; and on the W by sounds of $\frac{1}{2}$ mile and 1 mile in breadth from Easdale and Sheep Isle. It measures $4\frac{1}{2}$ miles in length from N to S, and $2\frac{1}{2}$ miles in extreme breadth; but is much indented by the sea, and has a very irregular outline. Its area is $3820\frac{1}{2}$ acres, of which $433\frac{1}{2}$ are foreshore and $2580\frac{1}{2}$ moorland. The surface is disposed in three parallel ridges, two intervening valleys, and a belt of plain along part of the shore. The northern ridge, which is the highest and most rugged, has an altitude of upwards of 800 feet, and presents to the sea on the N side of the island a series of naked precipices. The middle ridge is prolonged more decidedly than the former, and in a north-easterly direction; it does not acquire an elevation of more than 400 feet; and, though in many parts presenting faces of bare rock, it descends at each end to the sea in flat and verdant shores. The southern ridge is low and narrow; it extends from side to side of the island in the same direction as the former; it is distinguished, even at a distance, by its grey colour and its numerous protrusions of bare rock; and it is succeeded on the SE by a flat shore, much indented, but verdant and fertile.

Clay slate, in several varieties, constitutes the larger part of the island; but, in consequence of the immediate vicinity of the superior slate of Easdale, it is not very extensively worked. The soil, wherever the form of the ground admits of cultivation, is good. Several summits of the ridges command pleasant views of the intricate channels and numerous islands along the coast of Lorn, and of the distant mountains of Mull and Jura. The E side of the island, and the confronting land in Lorn, form, with the intervening strait, a series of very rich close landscapes. The strait somewhat resembles the famed Kyles of Bute, but is more isleted, more romantically narrow, and riper in those flexures of channel and projections of land which seem to prohibit farther progress. The shores, on the Seil side, now lofty and now low, are finely variegated with arable fields, green meadows, waving trees, and rugged rocks; and on the Lorn side they are high, extensively sheeted with hanging wood, and romantically varied with ornamental culture, wood-embossed cliffs, and sharply receding bays and creeks. The strait between these shores is at least 3 miles in length; and over most of this distance it rarely exceeds 200 yards in breadth, whilst in one place towards the N it contracts for a considerable way to a breadth of only 50 or 60 yards. The tidal stream, running with considerable velocity through this passage, generally wears the appearance of a great inland mountain river; and it betrays its marine connections only at low water when the rocks look up with a shaggy dress of seaweed. The water is deep enough at half tide to admit the passage of the boats of the country; and across the narrowest part of the strait strides a bridge of one large arch, erected towards the close of the 18th century, 78 feet in span and 26 above high-water mark. Lord Breadalbane owns all the island except the estate of Ardincaple, which was sold, with Sheep Island, in 1881, for £21,000. Pop. (1861) 724, (1871) 731, (1881) 661, (1891) 548, of whom 292 were females, and 468 were Gaelic-speaking.

Selkirk, a post and market town, a royal and parliamentary burgh, and a parish in Selkirkshire. Selkirk is the county town, and is situated on a rising-ground flanking a fine haugh on the right bank of Ettrick Water, $6\frac{1}{2}$ miles S by W of Galashiels, 7 SW of Melrose, 11 N by W of Hawick, 22 ESE of Peebles, and 38 SSE by road and 40 by rail from Edinburgh. It stands at the terminus of a branch line, $6\frac{1}{2}$ miles long, from Galashiels, formed under an act of 1854, and amalgamated with the North British in 1859. Its site on an eminence, rising from 400 to 619 feet above sea-level, is eminently favourable for sanitary arrangements; and its environs comprise the beautiful pleasure-grounds of Haining and picturesque reaches of Ettrick and Yarrow Waters to Oakwood Tower and Newark Castle. At the beginning of the 19th century the town presented the appearance of an ill-built, irregular, and decaying place, fast hastening to extinction; but since then it has suddenly revived, has undergone both renovation and extension, and is now a pleasant, prosperous, and comparatively ornate place, including various lines of new thoroughfares, elegant private residences, several good public buildings, and a number of busy factories. The plan of Selkirk is far from being regular. A spacious triangular market-place occupies the centre of the town; and thence the chief streets branch off in different directions. On the shortest side of the market-place is the town-hall, a neat modern edifice surmounted by a spire 110 feet high. The county buildings, occupying a site on the side of the road leading to Galashiels, were erected in 1870, and contain a handsome courtroom with an open timber roof, and well-planned apartments for various official purposes. Two portraits of George III. and his Queen were presented by a Duke of Buccleuch. A tunnel under the intervening street communicates with the sunk floor of the county prison, which stands opposite, and which was altered and enlarged in 1865-66 at a cost of £2000. In the open area of the market-place stands Handyside Ritchie's monument to Sir Walter Scott, erected by the gentlemen of the county in 1839.

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The statue, $7\frac{1}{2}$ feet high, represents the great author in his robes as sheriff of Selkirkshire, and is raised on a pedestal 20 feet high. Another monument, by Andrew Currie, was erected in High Street in 1859 to Mungo Park, the African traveller, who was born at Fowlishiels, in the parish of Selkirk, on the left bank of Yarrow Water. The ancient market-cross and the tolbooth, as well as the stalls of the old flesh market, also stood in the market-place; but all these have now disappeared. In 1884 a marble tablet was erected in the West Port to mark the site of the old Forest Inn, where, on 13 May 1787, Burns is believed to have written his 'Epistle to Willie Creech.' The railway station stands in the haugh at the foot of the rising ground occupied by the town; and the ascent from it, though short, is steep and fatiguing. A bridge, carrying the line across the Tweed immediately below the influx of Ettrick Water, was originally a wooden structure; but after the winter of 1877 it was reconstructed in a more substantial form, with six piers and with iron girders. A public hall was erected in 1894-95 in Viewfield Gardens at an estimated expense of £5000.

The present parochial church was built in 1862, and contains 1100 sittings. In 1888 a chancel and an organ were added to the church, which was renovated in 1889, and had a memorial window inserted in 1891. The living is worth £430. A chapel of ease was opened at Heatherlie in 1877, and cost £3856. Early Decorated in style, it is a cruciform and apsidal structure, containing 600 sittings. In 1889 a stained-glass memorial window was placed in the church, which was raised to *quoad sacra* parish status in 1885. The Free church was built soon after the Disruption, and contains 700 sittings. There are two U.P. churches in the town. The first U.P. congregation occupy a church, opened in 1880, with 850 sittings, and a hall behind. It is in the Early Gothic style, with a spire 130 feet high, and cost about £5000. The new West U.P. church (1890) has 700 sittings. The E.U. chapel contains 130 sittings. There are also Congregational and Baptist chapels. St John's Episcopal church, with 156 sittings, is an Early English edifice of 1869; and the Roman Catholic church of our Lady and St Joseph contains 250 sittings, and was erected in 1866. Three schools—Knowe Park, Burgh, and Roman Catholic—with respective accommodation for 420, 541, and 121 children, had (1893) an average attendance of 382, 407, and 56, and government grants of £402, 14s. 10d., £356, 2s. 6d., and £47, 13s. 6d. The Selkirk Science Class (Physiography) meets in the Burgh School. There is also the Scott and Oliver Trust, with an income of over £160.

Selkirk has a post office, with money order, savings bank, and telegraph departments, branches of the British Linen, the National, and Commercial Banks, and of the National Security Savings Bank, and six hotels. The disused prison of Selkirk was purchased by Provost Craig Brown, who converted it into a library and reading-room, and presented it to the town. It contains two full-sized replicas of 'The Resting Mercury' and the 'Adorante' that are now in the museum at Naples, and were recovered from the buried town of Herculaneum—the gift of Sir J. D. Gibson Carmichael, Bart. Among the miscellaneous institutions and associations of the burgh are the South of Scotland Chamber of Commerce, the Border Counties Association, a subscription library founded in 1772, a choral union (1872), a cottagers' horticultural society (1852), a farmers' club (1806), an association for the improvement of domestic poultry (1863), an ornithological association, a Conservative club, the Ettrick Forest Bowling Club (1788), two Co-operative societies, two friendly societies, a provident building society (1859), Freemasons', Free Gardeners', Foresters', and Good Templar lodges, an angling association, curling, cricket, football, bowling, and golfing clubs, a total abstinence society, and various religious and philanthropic associations. There are also a gaswork, a volunteer drill hall, with accommodation for 800 persons; the Union Hall, for 400; the Chapel Street Hall, for 150; and the Baptist Chapel Hall, for

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400. The *Southern Reporter* (1855) is published in the town every Thursday. The *Selkirk Advertiser*, containing chiefly advertisements, is published every Saturday, and distributed gratis in the town and neighbourhood. Markets are held on alternate Wednesdays. The anniversary festival known as the Common Riding is on the Friday following that of Hawick. Annual fairs are held on 5 April and 31 Oct. General holidays are held on the first Friday and Saturday in August.

Industries.—The present staple manufacture of Selkirk is woollen goods—tweeds, tartans, shawls, and such articles—similar to those produced at Galashiels. This manufacture was introduced in 1835, has since steadily increased in importance, and is carried on in large factories employing very many hands. There are now half-a-dozen mills engaged in spinning woollen yarns, and a dozen in the manufacture of tweeds and tartans, etc. One of these, the Scotch Tweed Manufacturing Society's mill, is carried on on Co-operative principles. Besides these there are a number of hosiery manufactories. The other industrial establishments are of less importance; they include an engineering and millwright work, saw-mills, corn-mills, and the usual commercial institutions of a country town. In former times a principal employment of the inhabitants was the making of single-soled shoon, 'a sort of brogues with a single thin sole, the purchaser himself performing the further operation of sewing on another of thick leather.' So prominent was this craft as to give the name of 'souters' (shoemakers) to the whole body of burghesses; while, in conferring the freedom of the burgh, one of the indispensable ceremonies consisted in the new-made burgess dipping in his wine and then passing through his mouth in token of respect to theouters four or five bristles, such as shoemakers use, which were attached to the seal of the burgess ticket, and which had previously passed between the lips of the burghesses present. 'The ceremony,' however, writes Mr T. Craig Brown, of Woodburn House, 'is comparatively modern, and I am much inclined to blame Sir Walter Scott for its institution.' He himself was made a 'Souter o' Selkirk' in this sort, but in the case of Prince Leopold of Saxe-Coburg (1819) the custom was omitted. Even in the middle of the 18th century the shoemakers of Selkirk were so numerous as to furnish more than one-half of the 6000 pairs of shoes demanded from the magistrates of Edinburgh by the Highland army in 1745. But since then the glory of the craft has departed, and theouters are not more conspicuous in Selkirk than in any other country town. A song very familiar in the S of Scotland has for its first verse—

'Up wi' theouters o' Selkirk
And down wi' the Earl o' Home!
And up wi' a' the braw lads
That sew the single-soled shoon!'

These lines, which undoubtedly relate to a football match between Lord Home's men and theouters, have given rise to much literary controversy. Scott, who gives other two verses in his *Minstrelsy of the Scottish Border*, seems inclined to refer them to the gallantry of the men of Selkirk at Flodden, and to the alleged polo-mongery of Lord Home on the same occasion. 'The few survivors,' he says, 'on their return home, found, by the side of Ladywood Edge, the corpse of a female, wife to one of their fallen comrades, with a child suck-



Seal of Selkirk.

ing at her breast. In memory of this latter event, continues the tradition, the present arms of the burgh bear a female, holding a child in her arms, and seated on a sarcophagus, decorated with the Scottish lion, in the background a wood.' Certain at least it is that the figures in the burgh arms are those of the Virgin and Child.

Selkirk was made a royal burgh in the reign of David I. It is governed by a provost, 2 bailies, a dean of guild, a treasurer, and 10 councillors. The corporation revenue in 1892-93 was £1524; and in 1893 the municipal constituency was 1161, of whom 249 were females. The police force is incorporated with that of the county, and since 1884 has been under the chief constable of Selkirkshire. Justice of peace courts for the whole county are held as occasion requires. Sheriff courts for the county and sheriff small debt courts are held weekly during session; small debt cases, ordinary cases, and cases under the Debts Recovery Act, on Fridays. By the Reform Act of 1832 Selkirk was thrown into the county for parliamentary purposes, but under the Act of 1868 it now unites with Galashiels and Hawick in returning one member to parliament. The parliamentary burgh is continuous with the royal burgh, and has a constituency of 912. Extensive works in connection with the water supply were undertaken in 1866-67; and in 1876 a complete drainage system was introduced, the sewage being dispersed by irrigation. Valuation of real property in the burgh (1885) £22,898, (1893) £23,632. Pop. (1831) 1880, (1861) 3695, (1871) 4640, (1881) 6090, (1891) 6397, of whom 3436 were females, and 5662 were in the police burgh.

History.—*Shielkirk*, or the *kirk* planted beside the *shielts* of herdsmen and hunters in the Forest, is the modern equivalent of *Scheleschirke*, the earliest spelling of the name on record. In 1113 Earl David—afterwards David I.—founded at Selkirk a Tyronensian abbey. The erection of a royal castle was probably posterior to that of the church, as he speaks of a road 'between the castle and the old town;' but after 13 years the abbey was removed for convenience to KILSO; and the distinction between Selkirk Abbatis, or the village beside the abbey, and Selkirk Regis, or the village beside the castle, gradually disappeared as the places merged in one. David I. seems to have preferred Roxburgh to Selkirk as a place of residence; but the latter castle was frequently inhabited by William the Lion, who dated several of his charters from it. Alexander II. and Alexander III. also spent some time at Selkirk; but after the accession of Robert I. it seems to have ceased to be a royal residence, though still regarded as a town of the king's demesne. Selkirk made some figure in the war of succession; and the gallantry of its citizens at the battle of Flodden has already been alluded to. James V. recognised the claims of the burgh by granting 1000 acres of Ettrick Forest to the corporation; and when the town, a little later, was burned by the English, the king gave timber from his forest to rebuild it. With the battle of PHILIPPAUGH, also in 1645, Selkirk had intimate connection; and in 1745 it was the scene of some skirmishing with the foragers of the Pretender's army, on its way to England. Selkirk gave the title of Earl in the peerage of Scotland to a branch of the powerful family of Douglas, which at one time held extensive sway in the Forest. The earldom is now one of the Duke of Hamilton's numerous titles. See *SR MARY'S ISLE*.

The parish of Selkirk was partly in Selkirkshire and partly in Roxburghshire until 1891, when the Boundary Commissioners placed it wholly in the county of Selkirk, and transferred its detached portion, situated at Todrig and comprising 1430½ acres, to the parish of Ashkirk. The parish of Selkirk is bounded N by Stow, NE by Galashiels, E by Melrose and Bowden, SE by Lilliesleaf and Ashkirk, SW by Kirkhope, and W and NW by Yarrow. The greatest length of the parish, from ENE to WSW, is 7½ miles; its breadth varies between 4½ and 7½ miles; and the area is 21,445 acres, of which 316 are water. The surface of the parish is

all of a hilly character; but, from the loftiness of its base and the peculiarities of its contour, presents less of an upland appearance than other districts much less hilly in reality. The TWEED flows 4½ miles east-south-eastward along all the northern and north-eastern boundary; ETTRICK WATER flows 7½ miles north-eastward either through the interior or along the Kirkhope boundary to the Tweed; and YARROW WATER runs 2½ miles east-north-eastward along the boundary with Yarrow parish, then 3½ south-eastward through the interior to the Ettrick. In the NE corner, at the influx of Ettrick Water to the Tweed, the surface declines to 397 feet. That portion of the parish to the right of the Ettrick rises rather in verdant swells and undulations than in hills; that between the Ettrick and Yarrow is largely occupied with the Duke of Buccleuch's wooded park of Bowhill; and that between the two last-named streams and the Tweed is mainly lofty and heath-clad. The highest points are Fowlishills (1454 feet), South Height (1493), Broomy Law (1519), Three Brethren (1523), and Fasteach Hill (1645). The prevailing rocks are greywacke, greywacke slate, and clay slate. The soil, for the most part, is light and dry. The mansions are Bowhill, Haining, Sunderland Hall, Broadmeadows, Philipphaugh, and Yair. All of these are noticed separately, as also are Newark Castle, the scene of Scott's *Lay of the Last Minstrel*; Oakwood Tower, the traditional residence of Sir Michael Scott, but built hundreds of years after the Wizard had died; the battlefield of Philipphaugh; Carterhaugh, the scene of the ballad of *Tamiane*; and Fowlishills, where Mungo Park was born. Besides Park, Selkirk counts among her distinguished sons Andrew Pringle, Lord Alemeer, an 18th century judge famous for learning and eloquence; George Lawson, D.D. (1749-1820), professor of theology to the Associate Synod, a man of considerable learning and of saintly character; and the poets, Andrew Lang and J. B. Brown ('J. B. Selkirk'). The town is the seat of a presbytery in the synod of Merse and Teviotdale. About one-third of the *quoad civilia* parish is now disjoined *quoad sacra*, forming the new parish of Heatherlie and a small part of Caddonfoot. Selkirk presbytery comprises the *quoad civilia* parishes of Ashkirk, St Boswells, Bowden, Ettrick, Galashiels, Kirkhope, Lilliesleaf, Maxton, Melrose, Robertson, Selkirk, and Yarrow; and the *quoad sacra* parishes of Caddonfoot, Galashiels West Church, Heatherlie, and Ladhope. The Free Church has also a presbytery of Selkirk. The landward schools are Selkirk public and Bowhill schools, with respective accommodation for 317 and 53 children, and (1893) an average attendance of 239 and 35, and grants of £229, 5s. 6d. and £47, 17s. Pop. (1801) 2098, (1831) 2853, (1861) 4739, (1871) 5633, (1881) 7432, (1891) 7298.—*Ord. Sur.*, shs. 25, 17, 1865-64.

Selkirkshire or Ettrick Forest, an inland shire in the S of Scotland, and one of the Border counties, lies between 55° 22' 20" and 55° 41' 54" N lat., and between 2° 47' 40" and 3° 18' 46" W long. It is bounded on the N by Peeblesshire and Midlothian, NE, E, and SE by Roxburghshire, SW by Dumfriesshire, and W by Peebleshire. Its greatest length is 28 miles, its greatest breadth 22, and its area 168,232 acres. Prior to 1891 there were eight parishes that were partly in Selkirkshire and partly in adjoining counties. Of those partly in Selkirkshire and partly in Peebleshire, Innerleithen and Peebles were placed by the Boundary Commissioners wholly in Peebleshire, and Lyne and Megget was restricted to its Lyne or Peebleshire portion (the parish being now named simply Lyne), the Megget portion going to the Selkirkshire parish of Yarrow. The detached part of Yarrow, and a portion of the main body situated at Minchmuir, were transferred to the Peebleshire parish of Traquair. Of the parishes partly in Selkirkshire and partly in Roxburghshire, Selkirk, Ashkirk, and Galashiels were placed wholly in the former county and Robertson in the latter, while so much of the Roxburghshire parish of Melrose as was in the burgh of Galashiels was transferred to the parish of Galashiels and to Selkirkshire. The parish of Stow,

that was partly in Selkirkshire and partly in Edinburghshire, was left untouched, the Boundary Commissioners merely recommending that the Selkirkshire portion of the parish should, under section 51 of the Local Government Act of 1889, be formed into a new parish of Caddonfoot. For further particulars see under the parishes mentioned. The county outline is very irregular. From the point on the NE where the Tweed leaves the county, the boundary line runs in an irregular south and south-westerly direction till it joins the Ale Water; then turning for a short distance to the NW, it proceeds again south-westerly to Moodlaw Loch; then irregularly westward by Quickningair Hill and Ettrick Pen to Wind Fell, where it trends tolerably due N by Mirkside to Herman Law, then westward and northward to Broad Law, afterwards irregularly north-eastward by Blackhouse Heights, Dun Rig, Newhall Burn, and Shillinglaw Burn to the Tweed near Scrogbank. From the Tweed a little east of Thomielee the boundary line runs NW by the eastern base of Windlestraw Law, then turns NE by Deaf Heights, and from the source of Caddon Water runs in a comparatively straight line SW till it strikes the course of the Gala, which continues to bound the shire till we reach the Tweed at the point at which we began to trace the outline.

Selkirkshire forms part of the Southern Highlands of Scotland, and lies from 300 to 2433 feet above sea-level. It rises in a continuous succession of uplands, and, excepting a narrow portion on the E side, is nothing more than a congeries of heights intersected by gorges, glens, and narrow bays. The pastoral nature of the country causes human habitations to be few and far between, so that an air of solitary stillness seems to hang over the verdant hills. Between the Tweed and Yarrow the hills are mostly heather-covered, but elsewhere they are more grassy.

Hills.—The positions of the chief heights are most conveniently indicated with reference to the rivers and river basins. In that part of the shire N of Tweed and W of Gala, the chief summits are Black Hill (1473 feet), Gala Hill (904), Neidpath Hill (1203), Mossilee Hill (1264), Knowes Hill (1222), Meikle Hill (1387), Great Law (1666), Ferniehurst Hill (1643), Deaf Heights (1844), Redscar Law (1837), Seathope Law (1778), and Windlestraw Law (2161). In the parts of Yarrow and Selkirk parishes N and W of the Yarrow are Linglee Hill (1123 feet), Three Brethren (1523), Peat Law (1396), Fowlshiels Hill (1454), Ashiestell Hill (1314), Elibank Law (1715), Lewinshope Rig (1320), Minchmoor (1856), Stake Law (2229), Blackhouse Heights (2213), Black Law (2285), Deer Law (2065), Flora Craig (1212), Dun Rig (2433), Notnan Law (2408), Dun Law (2584), Broad Law (2723), Cairn Law (2352), Loch-craig Head (2625), Shielhope Hill (1727). In the parts of the parishes of Ettrick, Yarrow, and Selkirk, between the Yarrow and Ettrick, are Newark Hill (1450 feet), Fastheugh Hill (1645), Fauldslope Hill (1532), Sundhope Height (1684), Bowerhope Law (1569), Wardlaw Hill (1951), and Herman Law (2014). In the SW of Ettrick parish rise Bodsbeck Law (2173 feet), Capel Fell (2223), Wind Fell (2180), Ettrick Pen (2269), Blacknowe (1806), and Quickningair Hill (1601). In Selkirk and Kirkhope parishes E of the Ettrick, and in Ashkirk, are Stand Knowe (1528 feet), Dun Knowe (1459), Dodhead Mid Hill (1118), Shaws Hill (1292), White Law (1059), Bleak Law (1215), Bellendean Rig (1144), The Craigs (1238), Cringle Law (1155), Whiteslade Hill (1134), Cavers Hill (1209), Hutlerburn Hill (1178), Huntly Hill (1146), and Moat Hill (744).

Rivers.—The largest river in Selkirkshire is the Tweed, which for 10 miles flows across the N part of the county, from its confluence with a small stream nearly opposite Gatehope Burn, to the junction with the Gala, and divides the Selkirkshire portion of Stow parish and Galashiels parish on the N, from Yarrow and Selkirk on the S. Within the bounds of Selkirkshire the Tweed receives on its right bank the Glenkinnon Burn and Ettrick Water, and on the left Caddon Water and the Gala. But the two specially Selkirkshire rivers are the

Yarrow and the Ettrick, both flowing diagonally through the county from SW to NE in parallel courses till they meet at Carterhaugh, about 2 miles above Selkirk, whence the united stream, under the name of Ettrick Water; flows north-eastward to the Tweed. The Yarrow rises in the SW corner of the county, and flows through the Loch of the Lowes and St Mary's Loch, at the NE end of which begins the true Yarrow of Scottish song. Its whole course of 25 miles towards the NE through the 'dowie dens o' Yarrow' is studded with scenes of historic and romantic interest. It has about forty affluents, of which the chief on the right bank are the Altrieve and Sundhope Burns, and on the left, the Megget, Kirkstead, Dryhope, Douglas, Mount Benger, Catslack, Deuchar, Lewinshope, and Hangingshaw Burns. The Ettrick, perhaps only second to the Yarrow in Scottish song, rising on Capel Fell, flows NE for 32½ miles before it joins the Tweed a little below Sunderland Hall. On the left bank it receives the Rangelcleuch, Kirkhope, Tushielaw, Crosslee, Birkindale, Singlie, and Philiphaugh Burns; and on the right, Tima Water (receiving Dalgleish and Glenkerry Burns), Rankleburn, with its tributary the Buceleuch Burn, Deloraine, Baillie, Huntly, and Windy Burns. After these rivers the Gala, in the N, ranks next in importance, which, flowing from Midlothian, forms the W boundary for about 5 miles. It is joined by the Heriot, Armit, and Lugate. In the SE of Selkirkshire, the Ale Water, taking its rise in the Roxburghshire parish of Robertson, flows through Ashkirk parish again into Roxburghshire. Its two Selkirkshire tributaries, each flowing from a separate little loch, are Todrig Burn from Shaws Loch, and Blindcleugh Burn from Akermoor Loch.

Lochs.—The lochs of Selkirkshire, though numerous, are small. St Mary's Loch, at the middle of the W boundary, is by far the most famous. This clear and calm sheet of water, 3 miles long and less than 1 mile broad, is beautifully situated in a sequestered valley, overlooked by rounded verdant hills, which impart a striking air of solitude to the scene. Sir Walter Scott, Hogg the Ettrick Shepherd, and Wordsworth have each celebrated its beauty in their poetry. Separated from St Mary's by only a narrow isthmus is the little Loch of the Lowes, 1 mile long and ¼ mile broad. The district about these lochs is inseparably associated with the Ettrick Shepherd, a monument to whom stands at the N end of the isthmus referred to. Other small lakes are Kingside and Crooked lochs, on the SE boundary of the county; Shaws and Akermoor lochs, in Kirkhope parish; and Shielswood, Essenside, and Headshaw lochs, in Ashkirk parish; while the Haining Loch was formerly the chief source of the water supply of the town of Selkirk.

Geology.—There is little variety in the geology of this county, as the stratified rocks belong exclusively to the Silurian system. The strata have been thrown into innumerable folds, frequently inverted, which are admirably seen in many of the stream sections. By means of the graptolites occurring in the black shale series, it is possible to determine the order of succession of the beds and to correlate the subdivisions with those in the typical Moffat area. A careful comparison of the black shale series in the county with the sections in the Moffat district reveals certain important variations from the normal succession in the latter region. Passing south-eastwards from the Dobb's Linn area near St Mary's Loch to the Upper Ettrick, there is a gradual introduction of arenaceous sediment in the representatives of the Moffat series. This variation is specially marked in the well-known section in the river Ettrick at Ettrick Bridge End. Here the observer finds about 200 feet of grits, greywackes, and shales, which are intercalated in the barren mudstones of the Moffat series. In like manner, as we proceed to the sections in the district of the Tima Water, the highest subdivisions of the black shales are there represented only by a few thin zones associated with black grits.

The lowest beds in the Silurian formation within the county belong to the black shale series, divisible into the

Glenkiln, Hartfell, and Birkhill groups, corresponding with the Llandeilo, Caradoc, and part of the Llandovery rocks of Wales. Though the folds are usually inverted in the basin of the Upper Ettrick, it is possible to unravel the sequence by means of the zones on both limbs of the folds.

Along the basin of the Upper Ettrick towards Berrybush and Altrieve, several bands of the Moffat series can be traced which are arranged in more or less perfect folds. In many of these sections the graptolites are well preserved, ranging from the Glenkiln black shales to the Birkhill zones. In the basin of the Lower Ettrick at Ettrick Bridge End, the strata form an isoclinal fold, traversed by normal and reversed faults. The lowest beds, consisting of the *Radiolarian* cherts, are exposed near the foot of the Baillie Burn, a tributary of the Ettrick below the manse. By means of a reversed fault they are brought into conjunction with the brown crusted flags and shales to the south. At the foot of the Baillie Burn a thin band of black shales yields characteristic Glenkiln forms, *Coenograpthus gracilis*, *Dicranograpthus nzeae*, *Cryptograpthus tricornis*, etc. Ascending the Ettrick towards the cliff below the manse, the Hartfell black shales, the barren mudstones, and associated grits are met with, and the latter pass underneath the lowest zones of the Birkhill shales. For some distance up stream the section is extremely complicated, owing to inverted folds and faults; but on approaching Gait Crook the strata are there found to be arranged generally in an isoclinal fold, passing upwards into the Abbotsford flags and shales. One noticeable feature in this section, and indeed throughout the area to the south of the river Ettrick, is the marked change in the lithological character of the subdivisions of the Birkhill group. Notwithstanding this change, the persistence of certain thin bands of silky shales charged with *Rastries maximus* and *Monograpthus Halli*, is of the utmost value in proving the constant repetition of the highest subdivisions of the Moffat shales by means of folds.

The black shale series just described pass upwards into shales, flags, greywackes, and grits (the Queensberry grits), forming a great development of strata of Llandovery age, of which the Birkhill black shales are the natural base line. Indeed, in the northern part of the basin of the Upper Ettrick, these Llandovery strata resemble rocks belonging to the same horizon in Moffatdale; but in the southern part of the Upper Ettrick they are cleaved and traversed by joints coated with carbonate of lime, and weather frequently with a brown crust. The well-known Grieston shales, lying towards the base of the Queensberry grits, are not typically developed in this area, but in the neighbourhood of Ettrick they assume the flaggy character which towards the NE merges into the Roxburgh type. The representatives of the Queensberry series pass up gradually into a group of brown crusted greywackes, flags, and shales, forming the Hawick rocks.

The Silurian strata are singularly free from intrusive igneous rocks. The dykes of minette or mica trap, referred to in the article on the geology of Roxburgh, are also represented in this county near Todrig, where they are much decomposed, weathering frequently into a ferruginous sand, while the walls of the dyke are hardened and silicified. These dykes were intruded among the Silurian strata prior to Upper Old Red Sandstone time, but the evidence in favour of their being older than the lower division of that formation is extremely doubtful. Quartz-felsite occurs in the form of dykes on the heights surrounding the Caddon Water; but perhaps the most interesting development of these veins occurs near the NW border of the county, to the SW of Windlestraw Law. Basalt dykes of Tertiary age are also represented in the county. One of them crosses the Bowerhope Law, overlooking St Mary's Loch, and probably is a prolongation of the dyke which passes through Hawick. Several small basalt veins occur in the neighbourhood of the head waters of the Ettrick. These are probably the continuations of the great basalt dykes that cross the Clyde near Abington, which have

been traced far to the NW into Ayrshire and Renfrewshire.

The general trend of the ice movement throughout the county was from W to E, as proved, both by the striae and the dispersal of the stones in the boulder clay. In the neighbourhood of St Mary's Loch the direction is a few degrees to the N of E, while on the heights between Eskdalemuir and Robertson and the Ettrick it is ENE. Near Selkirk the trend varies from ENE to NE. There are extensive deposits of boulder clay along the valleys, presenting the features commonly met with in Silurian areas. An examination of the stones in the boulder clay points to the conclusion that blocks were carried in the *moraine profonde* from Moffatdale into the vale of Ettrick towards Eskdalemuir, surmounting, in fact, the highest ground in the county. In the valleys situated to the N of the line of outcrop of the black shales at Ettrick Bridge End, the boulder clay forms well-marked terraces which have been cut through by the streams. The same distribution of the deposits is observable throughout the area occupied by the flags and greywackes underlying the black shales. The valleys or depressions are smaller, however, and the rib-shaped features formed by the rock project above the deposit of boulder clay. There is one interesting feature connected with the Selkirkshire valleys which is worthy of note. The slopes of the hills facing the ice flow are usually steep and rocky, while the opposite sides of the valleys are covered with drift. Such a disposition of the boulder clay is readily accounted for when we remember that the deposit would naturally accumulate in the lee of the hill ranges, while the slopes of the hills exposed to the sweep of the ice sheet would be subjected to a vast amount of erosion.

Many of the valleys in the upper part of the county nourished glaciers during the later phases of the ice age. Nearly all the tributary valleys in the upper part of the basin of the Ettrick possessed glaciers that united in the main valley, relics of which are still to be found in the groups of moraines. Excellent examples occur in the Coomb Burn—a great basin-shaped hollow scooped out of the shoulder of Ettrick Pen; and another conspicuous group is to be seen on the watershed between the head waters of the Yarrow and Moffat, where the ice seems to have moved E towards St Mary's Loch. This sheet of water and the Loch of the Lowes seem to have formed originally one lake, filling an ancient rock basin, which was probably excavated during the extreme glaciation. The Loch of the Lowes has been isolated from St Mary's by the cones of detritus accumulated by the Whitehope Burn on the S and the Oxleugh Burn on the N.

Economic Minerals.—Excellent building stone is obtained from the massive grits of the Queensberry series, and the harder greywacke bands underlying the Moffat black shale group.

Soil.—The soil, lying largely on a bottom of gravel, or whinstone, is, generally speaking, sound and dry. Marshy ground is, however, found near the tops of some of the hills, and among the moors of the SW. What little clay soil there is in the county lies mainly midway between the base and summits of the hills. The soil of the arable land is light and easily worked, and is well drained by the configuration of the surface. The sheepwalks lie mostly on greywacke rock or gravel, and are sound and dry.

Climate.—More rain falls on the moors and lofty hills of the W than on the other parts of the county. Snowstorms used to be frequent, and in some of the deep gullies the snow used to lie till almost summer. The air is pure and the climate healthy; and the people attain a fair average of longevity.

Industries.—Besides the manufacturing industries which centre wholly in the towns and larger villages, Selkirkshire carries on arable and pastoral farming—which indeed is the sole county industry proper. According to the returns of 1891, 1087 of the male population were engaged in agriculture, 6004 in industrial pursuits, 684 in commerce, 4790 unproductive, and the rest variously employed. As its title of Ettrick Forest

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suggests, this county was in early times covered with woods, and so more adapted to the chase than to tillage; indeed it was only in the third decade of the 18th century that any considerable agricultural improvements were set on foot. Since then, however, great advances have been made, though the county has always been far more pastoral than agricultural. Wheat has been raised in tolerably good crops at a height of 700 feet above sea-level; and oats, turnips, barley, and clover-hay thrive in regular rotation on ground from 700 to 800 feet above sea-level, near the head of Ettrick Water. The following table exhibits the acreage under the chief crops at various dates:—

	1868.	1877.	1884.	1894.
Wheat,	41	53	16	...
Oats,	4255	4449	4494	5,228
Barley,	663	676	376	366
Turnips,	2671	2942	2553	2,957
Cabbages, etc.,	102	253	263	220
Other Green Crops, . .	223	252	252	271
Bare Fallow,	...	38	3	3
Grass, Permanent Pasture,	5739	6286	7513	11,527
Grass in Rotation, . . .	6950	7374	7753	10,051

In 1891 there were 5112 acres under plantation, and 17 acres in market gardens and nursery-ground in 1893. The following table shows the numbers of live-stock in the county at various dates:—

	1868.	1876.	1884.	1894.
Horses,	...	568	580	691
Cattle,	2,402	2,572	2,657	626
Sheep,	170,305	162,719	165,061	138,421
Pigs,	369	447	449	540

As will be seen from the above table, sheep-farming is a highly important industry in the county, and is largely developed. The common breed of sheep is the Cheviot, which is highly valued for its wool. The blackfaced breed, at one time more numerous than any other kind, is reared in more limited numbers.

The manufacture of woollens is very important, but has been already treated in the articles on the towns and chief villages. Its development has contributed largely to increase the value of property in the county. The trade of Selkirkshire consists chiefly in the sale and export of sheep, lambs, and the manufactures of the towns; and the import of food, Australian wool, coal, and lime. Among the other resources of the county are the salmon fisheries on the Tweed, and the other fishings and shootings. According to the *Sportsman and Tourist's Guide* for Oct. 1894, the annual value of rod fishings let in Selkirkshire was £255, and the annual value of the grouse and other shootings was £2536. The extensive vineries at Clovenfords, where enormous quantities of grapes are grown for the markets, should also be classed among the industrial institutions of the county.

All the habitable portions of the county are well provided with good roads. The chief roads run along respectively the banks of the Tweed, the Yarrow, and the Ettrick; and various cross roads and minor thoroughfares intersect the portions of the county between these. The line of the North British railway from Edinburgh to Carlisle skirts the NE boundary for about 5 miles, with stations within the county at Bowland and Galashiels. A branch of the same line, 6 miles long, extends from Galashiels southwards to Selkirk, passing the Selkirkshire station of Abbotsford Ferry. Another branch runs from Galashiels westwards along the course of the Tweed to Innerleithen and Peebles. Its Selkirkshire stations are at Clovenfords and Thorneilee. Thus the whole county S of the Tweed is as yet quite untouched by any railway, with the exception of the short branch line to Selkirk, so that visitors to St Mary's Loch district must avail themselves of the coach from Selkirk, if they are dependent on the public means of conveyance. The only royal burgh in the county is Selkirk (6397); the only other town is Galashiels. Villages and ham-

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lets are Clovenfords, Ettrick Bridge, Yarrow-fens, and Yarrow-ford. The chief seats are Ashkirk House, Bowhill (Duke of Buccleuch), Broadmeadows, Elibank Cottage (Lord Elibank), Gala House, Glenmayne, Haining, Hangingshaw, Harewoodglen, Laidlawstiel (Lord and Lady Reay), Philiphaugh, Rodono (now let as a hotel), Sinton House, Sunderland Hall, Thirlestane (Lord Napier and Ettrick), Torwoodlee, Woll House, and Yair. The chief landowner in the county is the Duke of Buccleuch.

Selkirkshire is governed by a lord-lieutenant, a vice-lieutenant, 21 deputy-lieutenants, a sheriff, a sheriff-substitute, and its justices of the peace. Sheriff and other courts are held at Selkirk and Galashiels periodically as detailed in our articles on these towns. The County Council is composed of 20 members, comprising 14 for as many electoral divisions and 6 for the burgh of Selkirk. The county police force in 1894 comprised 14 men, under a chief constable. From 1832 till 1867 the county, inclusive of the burgh, sent one member to parliament; but it now unites with Peeblesshire in returning one member, and the burgh of Selkirk unites with Hawick and Galashiels in returning another. The parliamentary constituency of the county in 1893 was 803. Valuation of the county (1674) £6692, (1885) £67,709, (1893) £62,224, plus £3701 for railway. According to the census of 1891 Selkirkshire had an average of 106 inhabitants to the square mile, 12 counties being more densely populated, and the average for all Scotland being 185. Pop. (1801) 5388, (1811) 5889, (1821) 6637, (1831) 6838, (1841) 7990, (1851) 9809, (1861) 10,449, (1871) 14,005, (1881) 25,564, (1891) 27,712, of whom 14,803 were females, and 78 Gaelic-speaking. Houses (1891) occupied 5447, vacant 154, building 59.

The county includes six entire *quoad civilia* parishes—namely, Ashkirk, Ettrick, Galashiels, Kirkhope, Selkirk, and Yarrow—and a portion of Stow, all of which are assessed for the poor. It contains nine entire *quoad sacra* parishes, all in the presbytery of Selkirk and synod of Merse and Teviotdale, and a small part *quoad civilia* in the presbytery of Earlstoun and synod of Merse and Teviotdale. There are in the shire 27 elementary schools (21 of them public), which, with a total accommodation for 4550 children, had in 1893 on their registers 4395, and an average attendance of 3687.

Antiquities.—Selkirkshire seems always to have maintained its character as a 'forest' or hunting-place, so that the remains of its ancient inhabitants are not numerous. In the eastern parts there are remains of several British forts, and what has been described as a square Roman camp has been traced on the Borthwick water. The chief British antiquity is the CAR-RAIL, which intersects part of this county. Three crosses, called William's, Tait's, and Craik, stood respectively on a height near Broadmeadows, on Kershope Hill and on Craik Moor. Among the less ancient, but the most interesting, antiquities of the county are the ruined castles and moss-grown towers of the old Border troopers, none of them older than the 14th century, and most belonging to the 16th or the 17th. The names of very many of these are familiar in Scottish Border ballad and history, for none of the Border counties is more celebrated in song than Ettrick Forest. Among the more famous of these towers are Dryhope Tower, where dwelt Mary Scott, 'the Flower of Yarrow'; Hangingshaw, the scene of the ballad of 'The Outlaw Murray'; 'the shattered front of Newark's Tower, renowned in Border Story,' as Wordsworth sings; Thirlestane, Gamescleuch, Tushielaw, the hold of Adam Scott, 'the King of the Borders'; Oakwood, Deuchar, Blindlee, and Kirkhope. Blackhouse Tower was the scene of the Douglas tragedy; and 'seven large stones,' says Sir Walter Scott, 'erected upon the neighbouring heights of Blackhouse, are shown as marking the spots where the seven brethren were slain; and the Douglas Burn is averred to have been the stream at which the lovers stopped to drink.' There are still vestiges of a tower to mark the site of the abode of 'Jamie Teller of the Fair Dodhead'; and the position may still be traced of St Mary's Kirk, near

St Mary's Loch, which was destroyed by the Scotts in a feud with the Cranstons in 1557. The old church of Buccleuch, also, has left some remains.

History.—The territory now known as Selkirkshire formed part of the domains of the ancient Gadeni, who seem to have occupied it rather as hunters than as settlers. The Saxons also, who followed upon the retirement of the Romans, seem not to have cleared away the woods to any great extent, for many centuries after their first appearance the shire still was famous for its forests and its facilities for the chase. Under the Scottish kings the forest was a royal demesne, and the barons and Border nobles who dwelt in it held their lands nominally as kindly tenants or rentallers of the crown, and according to Sir Walter Scott did not receive charters till about 1650. But in point of fact, the Border chieftains paid little attention to the conditions of their holding, and acted with complete independence—requiring James V. himself to take strong measures to reduce them to order. Sheriffs were appointed by the king, the earliest on record appearing before 1214. King Edward I. of England, in 1304, granted to the Earl of Gloucester the keeping of the forest of Selkirk, and in 1305 recognised the Earl of Pembroke as the hereditary sheriff of the county. From soon after the accession of Bruce till 1455, the forest was, however, held of the Scottish crown by the Douglasses. In 1346 William Douglas succeeded in expelling the English from at least part of this county. In 1509 the sheriffdom was assigned to John Murray of Falahill; and in 1748, on the abolition of hereditary jurisdictions, John Murray of Philiphaugh received £4000 in compensation, and the Duke of Douglas a lesser sum. The more romantic features of its history are closely interwoven with its literature, and the numerous Border ballads commemorate more or less accurately various historical incidents connected with the shire. The pathetic ballad of *The Flowers of the Forest* refers to the desolation caused in the district by the disaster of Flodden, while the ballad of the Battle of Philiphaugh records the victory within the county of the Covenanters over Montrose in 1645. The labours of Scott, who lived for a time at Ashiestiel, and was sheriff of Selkirk; of Hogg, who was born in the vale of Ettrick in 1770; and others, have either preserved or caused the lyric fame of countless spots within the county, from the 'Dowie Dens o' Yarrow,' to the famed anglers' hostelry of Tibbie Shiels at St Mary's Loch.—*Ord. Sur.*, sh. 25, 17, 16, 24, 1864-65. See Dr. Craig Brown's *History of Selkirkshire* (2 vols. Edinb. 1886).

Sempill. See CASTLE-SEMPLE.

Senwick, an ancient parish of Kirkcudbrightshire, united to Bogue in 1618. Its ruined church is beautifully situated near the W of Kirkcudbright Bay, 5½ miles SSW of Kirkcudbright. In the kirkyard is buried John M'Taggart (1791-1830), author of the *Gallivadian Encyclopedia*. Senwick House, a little to the NW, is the seat of Adam John Corrie, Esq., of Dunrod (b. 1842; suc. 1874).—*Ord. Sur.*, sh. 5, 1857.

Seton, an ancient parish of Haddingtonshire, annexed to Tranent in 1580. Its church of St Mary and Holy Cross, 1½ mile NE of Tranent town and 2½ miles SW of Longniddry station on the North British railway, must have been founded prior to Robert III.'s accession in 1390, since early in his reign Catherine Sinclair of Hermandston, widow of Lord William Seton, 'biggit ane yle on the south syde of the parochie kirk of Seytoun.' From time to time additions were made to the church, which George, second Lord Seton, rendered collegiate in 1493 for a provost, six prebendaries, a clerk, and two singing boys; but it was never completed, and in 1544 suffered much at the hands of the English invaders, who 'tuk away the bellis and organis and other tursable (movable) thingis, and put thame in their schippis, and brint the tymber wark within the said kirk.' As restored at considerable cost by the late Earl of Wemyss, who is buried here with his Countess, Seton church now consists of a Decorated three-bayed choir, with a trigonal apse and a N sacristy, two transeptal chapels, and a

low square Early English tower, with a truncated octagonal spire. The tracery of the choir windows is very good, and special features of interest are the sedilia and piscina, three monumental effigies of the Setons, and a long Latin inscription to the fifth Lord.

Seton Palace, which stood near the church, appears to have been built at different periods. It is said to have been 'burnt and destroyed' by the English in 1544, and its SE front most probably dated from the reign of Queen Mary. It excelled in taste and elegance any other mansion of the 16th or the 17th century, and was esteemed much the most magnificent castle in Scotland. Its gardens and terrace walks, as well as its splendid interior, were the delight of kings; and it consisted of two sides of a quadrangle, united by a rampart. When, on 5 April 1603, James VI. was on his way to take possession of his English crown, he met the funeral of the first Earl of Winton, and, halting his retinue, he seated himself on the garden-wall of the palace whilst the funeral passed by. In 1617, the same monarch, revisiting his native kingdom, spent at Seton his second night after crossing the Tweed; and Charles I. and his court were twice entertained here in 1633. No vestige of the palace now remains, it having been pulled down in 1790 by Mr Mackenzie of Portmore, the then proprietor, who erected the present castellated edifice after a design by Adams.

In the 12th century the ancestors of the Seton family received a charter of the lands of Seton, Winton, and Winchburgh. Alexander de Seton, a nephew of Robert Bruce, obtained from his royal uncle the manor of Tranent, and other extensive possessions of the noble family of De Quincey, who had espoused the cause of the English king. The Setons became one of the richest and most influential families in Scotland, great in their own strength, and exalted by many noble and princely intermarriages. They were created Lords Seton in 1448. George, third Lord Seton, fell at Flodden (1513), and George, fifth Lord, is famous in history as Queen Mary's most zealous adherent, and, with two of his children, figures conspicuously in Sir Walter Scott's tale of *The Abbot*. Calderwood characteristically speaks of him as 'a man without God, without honesty, and often times without reason.' On 11 March 1566, the night after Rizzio's murder, the Queen and Darnley, slipping out of Holyrood, rode straight to Seton, and thence got an escort to DUNBAR; and on Sunday, Feb. 16, 1567, just a week after Darnley's assassination, the Queen and Bothwell went to Seton Palace. There they remained some days, amusing themselves shooting at the butts, and, having together won a match against Seton and Huntly, were entertained by the losers to a dinner at Tranent. Lord Seton was one of Mary's chief supporters at Carberry Hill, and when she made her escape from Loch Leven in May 1568, he was lying among the hills on the other side, and immediately joining her, conducted her first to his castle of NIDDRY, in Linlithgowshire, and then to Hamilton. From the defeat of Langside he retired to Flanders, where, during two years of exile, he was forced for his living to become a waggoner. A painting of him driving a waggon with four horses was in the north end of the long gallery of Seton. In 1584 he was sent by James VI. on an embassy to France; and he died soon after his return, on 8 January 1585, aged about 55. In 1600 Robert, his son, was created EARL OF WINTON—a title forfeited by the fifth Earl for his part in the rebellion of 1715, when Seton Palace was held for three days by a body of Highlanders under Mackintosh of Borlum. The Earl died unmarried at Rome in 1749; and, through the marriage, in 1582, of the first Earl of Winton with the eldest daughter of the third Earl of EGLINTON, the representation of the Winton family devolved on the Earl of Eglington, who in 1840 was served heir male general of George, fourth Earl of Winton, and who in 1859 was created Earl of Winton in the peerage of the United Kingdom.—*Ord. Sur.*, sh. 33, 1863. See Sir Richard Maitland's *Chronicle of the House of Seytoun* (Bannatyne Club, 1829); vol. iv. of Billings' *Baronial*

and *Ecclesiastical Antiquities* (1852); and pp. 183-194 of P. M'Neill's *Tranent and its Surroundings* (1883).

Shaggie Burn, a stream of Crieff parish, Perthshire, rising at an altitude of 2050 feet, and running 6 miles SSE and SSW along the NE boundary and across the interior of the parish, till, after a total descent of 1800 feet, it falls into Turret Burn, $1\frac{1}{2}$ mile N by W of Crieff. It runs through the grounds of Monzie Castle, forms three cascades, has beautiful copse-clad banks, contains small trout, and itself receives **KELTIE BURN**.—*Ord. Surv.*, sh. 47, 1869.

Sambellie, a modern mansion, with beautiful grounds, in Newabbey parish, Kirkcudbrightshire, 7 miles S by W of Dumfries. Its owner is William Stewart, Esq. (b. 1848; suc. 1874).—*Ord. Surv.*, sh. 5, 1857.

Shandon, a place in Row parish, Dumbartonshire, on the E shore of the Gare Loch, $\frac{4}{5}$ to $\frac{5}{8}$ miles NW of Helensburgh, with a station on the West Highland railway (opened in 1894). Steamers in connection with the Glasgow and South-Western and the Caledonian railways call at the pier. It has a Free church, a post, money order, and telegraph office under Helensburgh, and a sea-side home for city children, the gift of the late Sir Archibald Orr Ewing, Bart. Its name (Gael. *seam-dùn* 'old fortress') is derived from the 'Old Dun,' traces of which are still visible. West Shandon, a fine Elizabethan edifice of two storeys, with a lofty turreted tower, was commenced in 1851 as the seat of Robert Napier, Esq. (1791-1876), the great marine engineer. After his death its splendid collection of art treasures was sold in London; and the mansion itself was converted into a hydropathic establishment, being enlarged by the addition of Turkish and swimming baths, etc. The grounds are of great beauty, with their winter garden and artificial ponds, and the view from the house is singularly fine. **FASLANE BAY**, with vestiges of an ancient castle and chapel, lies half-way between Shandon and Garelochhead.—*Ord. Surv.*, sh. 30, 1866.

Shandwick. See **NIGO**, Ross-shire.

Shankend Station. See **CAVERS**.

Shankston Loch. See **KIRKMICHAEL**, Ayrshire.

Shanter. See **KIRKOSWALD**.

Shanwell House, a mansion in Orwell parish, Kinross-shire, near the left bank of the North Queich, 3 miles W of Milnathort.

Shapinsay, an Orkney island, 1 mile N of the nearest part of Pomona, $\frac{3}{8}$ miles S by W of Eday, $\frac{3}{4}$ W of Stronsay, and $\frac{3}{8}$ NNE of Kirkwall, under which there is a post office of Balfour, with money order and savings bank departments. Its utmost length, from E to W, is $\frac{4}{5}$ miles; its breadth, from N to S, varies between $\frac{1}{8}$ and $\frac{4}{5}$ miles; and its area is 6738 acres, of which 85 belong to the pastoral islet of Helliarr Holm ($2 \times \frac{1}{2}$ furl. 90 feet high). On its southern coast, towards the W, lies the modern village of **ELLWICK**, around a fine bay of the same name; whilst the N side is indented by Veantry Bay, which, measuring $\frac{1}{4}$ mile across the entrance, and $\frac{1}{8}$ mile thence to its inmost recess, is flanked to the W by Galt Ness, to the E by the Ness of Ork. The surface, all round the shore, and for some way inward, is low and tolerably level, but rises gradually towards the centre, 'where the Ward Hill (162 feet) commands a map-like view of great part of the Orkney Islands. To abridge from an article by Mr Pringle in *Trans. Highl. and Ag. Soc.* (1874), 'The surface soil is naturally moorish, and covered with short heath, but underneath there is, for the most part, deep red clay subsoil, with which the upper soil mixes well. Much of the upper soil, however, has been skinned in former times for the purpose of mixing with dung to manure the "infield" land. The prevailing rock in the western part of the island is clay-slate, which mostly lies at a considerable depth from the surface. A coarse sandstone prevails in the eastern part. There is not much peaty soil, *i.e.*, deep enough to convert into peat fuel; and this kind of land is now nearly run out. Nearly all the land has required draining, which appears to have been efficiently done with stones or pipe tiles. In 1848 there were exactly

700 acres—one-tenth of the entire area of the island—in cultivation. In 1859 the arable land had been increased to 5000 acres, and now it extends to over 6000. In 1848 the land under cultivation was scattered in small patches of a few acres here and there all over the island, but Shapinsay now presents one continuous tract of cultivation, until we reach the extreme point of the island on the E, where there is some unimproved land, immediately behind an exposed headland. The farms vary from 30 to 200 acres in extent, as it has been Col. Balfour's principle to encourage his tenants to rise in the social scale; and some who now occupy large farms began on much smaller holdings. In former times the people lived partly by the sea and partly by the land, and were neither fishermen nor farmers; but this is all altered, and a man must elect to be either one or the other. Houses, draining, and other permanent improvements are erected and done either by the tenant, who receives "amelioration" for the same at the end of his lease, or by the proprietor, in which case the tenant pays interest on the outlay; but, in general, the tenants prefer the former plan. Houses and cottages must, however, be put up according to plans approved by the proprietor; and in Shapinsay the new farmsteadings and cottages are all of a most substantial character. When Col. Balfour laid off the island into squares, he provided at the same time for main lines of excellent road throughout the island, and these have since been completed to the extent of 12 miles.' Picts' houses, for the most part pleasantly situated, are numerous along the shores, and usually occur at such intervals that two or three are within view of each other. The Standing-Stone of Shapinsay, near the centre of the island, rises 12 feet above the surface of the ground, and the Black Stone of Odin, a huge mass of rock, lies prostrate on the sand of the northern shore. Both are supposed to have been deemed sacred in Scandinavian folklore. A place called Grucla, on the W coast, nearly opposite the skerry of Vasa, where the tides are rapid and the sea is shallow, is absurdly said to have received its name from the stranding on it of one of Agricola's ships, in the celebrated voyage of discovery round the northern seas of Britain (86 A.D.) Balfour Castle, 6 miles NNE of Kirkwall, commands a magnificent view, and itself is an imposing Scottish Baronial edifice, erected in 1847 from designs by the late David Bryce, R.S.A., with a fine library, conservatories, vineries, peach-houses, terraced gardens, and thriving plantations. Its owner is Col. James William Balfour of Balfour and Trenabie (b. 1827; suc. 1887). There is an agricultural association, also a battery of volunteer artillery. A fair is held on the first Monday before Kirkwall Lammas market. Shapinsay is a parish in the presbytery of North Isles and the synod of Orkney; the living is worth £195. There are Established, U.P., and Evangelical Union churches; and 2 public schools, Shapinsay and North Shapinsay, with respective accommodation for 132 and 55 children, had (1893) an average attendance of 81 and 43, and grants of £109, 14s. and £61, 16s. 6d. Valuation (1884) £2273, 15s. 7d., (1893) £1964, 10s. 7d. Pop. (1801) 744, (1831) 809, (1861) 973, (1871) 949, (1881) 974, (1891) 903.

Shawbost or Sheabost, North and South, two fishing villages in the Carloway portion of Lochs parish, Lewis, Ross and Cromarty, until 1891, when they were transferred by the Boundary Commissioners to the parish of Barmas. They stand near the NW coast, $\frac{5}{8}$ miles NE of Carloway, and have a post office under Stornoway and a public school. Pop. of North Shawbost (1881) 322, (1891) 304; of South Shawbost (1881) 291, (1891) 301.—*Ord. Surv.*, sh. 105, 1858.

Shawhead. See **KIRKPATRICK-IRONGRAY**.

Shawhill, a neat modern mansion in Riccarton parish, Ayrshire, near the left bank of the winding Irvine, 5 furlongs NNE of Hurlford.

Shawlands. See **GLASGOW**.

Shaw Park. See **SCHAW PARK**.

Shaws Loch. See **KIRKHOPE**.

Sheecho, Burn of. See **DURRIS**.

Sheep Isle. See **SANDA**.

Sheep Isle, an islet of Kilbrandon parish, Argyllshire, 1 mile NW of Skell, and $5\frac{1}{2}$ miles SW of Kerrera. It measures 7 by 2 furlongs, and has an abrupt rocky boundary of low cliffs. It forms a connecting link between Mull on the one hand, and Seil and Kerrera on the other. Its name of Sheep Isle is a fictitious one, given it by map-makers; whilst Inis-Capul, its real name, in the translated form of Mare Island has been erroneously applied to the Garvelloch islands, 6 miles to the SSW.

Sheil. See GLENSHIEL.

Sheildaig. See SHIELDAIG.

Sheil, Loch; a sea-loch of Lochs parish, Ross and Cromarty, on the E coast of the Lewis, $15\frac{1}{2}$ miles S by W of Stornoway. It strikes $6\frac{1}{2}$ miles west-by-northward, and measures $3\frac{1}{2}$ miles across the entrance, in which lies Eilean Iubhard ($1\frac{1}{2}$ mile $\times$ 5 furl.; 100 feet high).—*Ord. Sur.*, sh. 99, 1858.

Sheriffmuir, a battlefield in Dunblane parish, Perthshire, on the north-western slope of the Ochils, $2\frac{1}{2}$ miles E by N of Dunblane town. The battle was fought on 13 Nov. 1715—the same day on which the Pretender's forces surrendered at Preston in England. The Duke of Argyll commanded the royalist troops, and the Earl of Mar those of the Pretender. The Earl, having just taken up his quarters at Perth, and received strong reinforcements from the north, got intelligence which led him to believe that the Duke was insecurely posted at Stirling. Accordingly, he conceived the idea of forcing the passage of the Forth, and marching southward in defiance of the Duke, so as to form a junction with the Pretender's friends in the south. He left Perth on 11 Nov., and rested that night at Auchterarder. Argyll, getting information of his movement, determined instantly to intercept him, and give him battle. He accordingly passed the Forth at Stirling on the 12th, and took post in the neighbourhood of Dunblane, with his left resting on that town, and his right extending towards Sheriffmuir. Mar arrived the same evening within 2 miles of Argyll, and encamped for the night in order of battle. His troops amounted to 8400; while those of Argyll did not exceed 3500. General Whetham commanded the left wing of the royal army, and Argyll himself commanded the right. Early on the 13th the right wing of the rebel army commenced the battle by a furious attack on the royalist left. They charged sword in hand with such impetuosity as at once to break General Whetham's array, and drive his troops into complete rout, with prodigious slaughter. Whetham fled at full gallop to Stirling, and there announced that the royal army was totally defeated. But, in the meantime, Argyll, with the right wing of the royalist army, attacked and broke the rebels' left, and drove them 2 miles back to the Allan. He pushed his advantage chiefly by the force of his cavalry, and was obliged to resist no fewer than ten successive attempts to rally. A part of his infantry was following hard to support him, when the right wing of the rebel army, suddenly returning from the pursuit of Whetham, appeared in their rear, and threatened to crush both them and the cavalry. Argyll faced about, with all his strength, to repel this new and great danger. The antagonist forces, however, looked irresolutely at each other, neither of them seeming disposed to rush into fresh conflict; and after cooling completely down from the fighting point, they retired quietly from each other's presence, Argyll to the town of Dunblane, and Mar to the village of Ardoch. Both armies laid claim to the victory, and hence the well-known sarcastic lines:—

'There's some say that we wan,
And some say that they wan,
And some say that nane wan at a', man;
But as thing I'm sure,
That at Sheriffmuir

A battle there was, that I saw, man;
And we ran and they ran, and they ran and we ran,
And we ran, and they ran awa, man.'

For Argyll, however, this ineffectual conflict had all the results of a victory. On the field of battle is a large

block of whinstone, the 'Gathering Stone of the Clans,' on which the Highlanders are said to have whetted their dirks and claymores, and which in 1840 was enclosed in a strong iron grating, with a brass inscription plate attached, by the late Mr Stirling of Kippendavie.—*Ord. Sur.*, sh. 39, 1869.

Shetland, a group of islands and islets lying NE of the Orkney Islands, being the most northerly part of the whole of Scotland, and forming a county by themselves, though uniting with the Orkney Islands (which form another county) in sending a member to Parliament. The only alterations effected by the Boundary Commissioners were upon the parishes of Fetlar, Yell, Lerwick, and Bressay (which see), the county boundaries remaining untouched. The group consists of 23 inhabited islands, about 70 smaller islands used for grazing purposes, and a very large number of waste rocky islets and skerries. All the islands except two—Fair Isle and Foula—form a compact group, the most southerly point of which, Sumburgh Head, is 50 miles NE of Point of Sinsoss, the most northerly point of North Ronaldshay. Fair Isle is 27 miles ENE of Point of Sinsoss and $2\frac{1}{2}$ SW of Sumburgh Head, and Foula is 27 miles W of Scalloway and 16 WSW of the nearest part of the Mainland island at Wats Ness in the parish of Sandness and Walls. Four miles NE of Foula are the Havre de Grind Rocks. The group extends from N latitude $60^{\circ} 51' 45''$ (Out Stack, N of Unst) to $59^{\circ} 30' 30''$ (Meo Ness at the S end of Fair Isle), and from W longitude $0^{\circ} 40' 20''$ (Bound Skerry, one of the Out Skerries NE of Whalsey) to W longitude $2^{\circ} 7'$ (Wester Hoevidi on the W side of Foula). Excluding the outlying islands, the compact main portion extends from N latitude $60^{\circ} 51' 45''$ (at Out Stack) to $59^{\circ} 50' 56''$ at Horse Island W by S of Sumburgh Head, and from W longitude $0^{\circ} 40' 20''$ (at Bound Skerry) to $1^{\circ} 40' 30''$ at Fogla Skerry W of Papa Stour. The distance in a straight line, from either The Gird or The Noup at the N end of Unst south-south-westward to Sumburgh Head, is 70 miles, and the breadth, from Bound Skerry west-south-westward to Fogla Skerry, $35\frac{1}{2}$ miles, but the average breadth is very much less. Sumburgh Head lies 170 miles N of Buchan Ness, and the distance from Out Skerries across the North Sea to the mainland of Norway near Bergen is 204 miles. The principal island of the group is the Mainland, which comprises more than half the area, and contains fully two-thirds of the inhabitants. It extends from N to S for 54 miles—that being the distance in a straight line from Point of Fethaland (N) to Sumburgh Head (S)—and has an extreme breadth of $21\frac{1}{2}$ miles from Stava Ness on the S side of Dury Voe opposite Whalsey, to Matta Taing on the W near Melby. It is impossible to give any general idea of its outline, as the coast-line is everywhere broken up by deep voes,* some of which run so far inland as almost to divide the land into several islands. The chief of these bays or inlets are, from N to S, along the E coast, Burra Voe, Colla Firth, Gluss Voe, Sullom Voe—including Ell Wick (at the head) and Garths Voe (E)—Orka Voe, Dales Voe, another Colla Firth, Swining Voe, and Lunna Voe—these four all close together W of Lun-nasting—Hanna Voe, Vidlin Voe, Dury Voe, South-Nesting Bay, Cat Firth, Wadbister Voe, Lax Firth, another Dales Voe—these four close together to the N of Bressay Sound—Brei Wick, Voe of Sound, Gulber Wick, Aith Voe, Sand Wick, Hos Wick, Channer Wick, and Leven Wick—the last four all branches of one great opening near Sandwick; at the S end West Voe of Sumburgh, and on the other side of Scatness Quendale Bay; on the W side of the long promontory that runs southward and terminates at Sumburgh Head are St Ninian's Bay and Bigton Wick, and away to the N of this is Cliff Sound, at the upper end of which is Scalloway Bay, and farther N are Whiteness Voe, Stromness Voe, Weisdale Voe, Sandsound Voe, Sand Voe, Selv Voe, Skelda Voe—the last five opening out into The Deeps, and Sandsound Voe passing up into Sandsting Firth and Bixter Voe; farther

* A voe is a fiord; a geo, a rocky creek with precipitous sides; a wick is a broad, open bay.

W are Gruting Voe passing up into Browland Voe, and Vaila Sound; and on the W side of the island is the great St Magnus Bay (12 × 7 miles), with Voe of Snar-raness, West Burra Firth, Brindister Voe, and Voe of Clousta on the S; Aith Voe (SE), Gon Firth and Olua Firth (centre), and Busta Voe (NE)—at the head; and Mangaster Voe, Ura Firth, and Brei Wick, on the N; and farther N still is Ronas Voe. Many of the inlets are well sheltered, and afford convenient anchorages. St Magnus Bay and Ell Wick at the head of Sullom Voe approach so near to one another that the Mainland here is only saved from being separated into two portions by a narrow neck of land some hundred yards wide, and at Gluss Voe, Orka Voe, Lunna Voe, and elsewhere there are also very narrow necks. All round Mainland are many islands and islets, the chief of the former, exclusive of Yell, being West Linga, Whalsey, Bressay, Isle of Noss, and Mousa on the E side; East Burra, West Burra, Trondra, and Vaila on the SW; Papa Stour on the W, and Muckle Roe, Vementry, and Papa Little at the head of St Magnus Bay. Of the islets the chief are Gruney ($\frac{3}{4}$ mile N of Point of Fethaland), Muckle Holm, Lamba, Brother Isle, Little Roe, Uynarey, Bigga, Samphrey, Fish Holm, Linga, and Lunna Holm, all in Yell Sound; East Linga, E of Whalsey; Colsay, at St Ninian's Bay; South Havra, S of Burra; Papa, Oxna, Langa, and Hildasay, NW of Burra; and Linga, E of Muckle Roe. West Linga is separated from the main island by Lunning Sound ($1\frac{1}{2}$ mile), and from Whalsey by Linga Sound (4 furl.); Bressay from the main island by Bressay Sound ($\frac{3}{4}$ to 1 mile), and Isle of Noss from Bressay by Noss Sound (200 yards); Mousa from the main island by Mousa Sound ($\frac{1}{2}$ mile at narrowest part); East Burra and Trondra from the main island by Clift Sound ($\frac{1}{4}$ to $\frac{3}{4}$ mile), the one from the other by Stream Sound (200 yards), and East Burra from West Burra by Long Sound (N), South Voe (middle), and West Voe (S), none of these being anywhere more than $\frac{1}{2}$ mile wide, and so narrow at the junction of Long Sound and South Voe that the two islands are here connected by a bridge; Vaila is separated from the main island by Wester Sound ($\frac{1}{4}$ mile NW), Vaila Sound (N), and Easter Sound (300 yards NE); Papa Stour from the main island by Sound of Papa (1 mile); Vementry by Criba Sound and Uyea Sound (100 to 400 yards, both SE); Papa Little by The Rona (3 furl. SW) and Sound of Houbansetter ($\frac{1}{4}$ to $\frac{1}{2}$ mile E); and Muckle Roe from Vementry by Swar-backs Minn (1 mile S) and from the main island by Roe Sound (150 to 300 yards NE). Four miles NE of Whalsey are the Out Skerries, the most easterly of them being Bound Skerry; and NE of Mainland are the large islands of Yell, Unst, and Fetlar. Yell is separated from Mainland by Yell Sound, which runs due N and S for 10 miles, and then passes SE for $2\frac{1}{2}$ miles, and E for 4. The north-and-south portion has an average breadth of from $3\frac{1}{2}$ to 4 miles; the narrowest part is about the middle of the south-easterly portion, where, at the island of Bigga, the width is only $2\frac{1}{2}$ miles; and at the E end the distance from Lunna Holm (Mainland) to Burra Ness (Yell) is fully $2\frac{1}{2}$ miles. The small islands lying in the Sound have been already mentioned, and at the NW corner of Yell is the small Gloop Holm, at the S end of Bluemull Sound is one of the many islands called Linga, and farther S opposite the middle of the E coast is Hascosay, separated from Yell by Hascosay Sound ($\frac{1}{2}$ mile), to the E of which beyond Colgrave Sound ($\frac{3}{4}$ mile to 4 miles) is Fetlar. To the NE of Yell, and separated from it by Bluemull Sound ($\frac{1}{2}$ to 1 mile wide and 4 miles long), is Unst, with the Rumbings, Tipta, Muckle Flugga, and Out Stack skerries to the N, the last being the most northerly portion of Scottish land. Off the middle of the E coast are Balta and Huney; near the SE corner is the small Haaf Gruney; and at the S end is Uyea, separated from Unst by Uyea Sound ($2\frac{1}{2}$ furl. NW) and Skuda Sound ($\frac{1}{4}$ to $\frac{1}{2}$ mile NNE).

The surface is irregular, and generally rises higher than in Orkney. About half the whole area is over

250 feet above sea-level, but only in a few places does it rise higher than 500 feet, the highest points being Ronas Hill (1475 feet) near the centre of the parish of Delting, in the NW of Mainland, and The Sneug (1372) in Foula. Particulars of all the leading islands and inlets will be found under their separate headings. Between North Ronaldshay and Fair Isle the sea bottom has a depth of from 40 to 60 fathoms, and between Fair Isle and Sumburgh Head the greatest depth is from 60 to 80 fathoms, except at two points NE of Fair Isle, where the depth is between 80 and 100. About the compact portion of the islands the depth of the voes, wicks, and sounds is nowhere greater than 20 fathoms. The slope of the sea-bottom round the coast from sea-level to 40 fathoms is rapid, but afterwards it becomes more gradual, except SE and E of Sumburgh Head, where the rapid slope continues to 80 fathoms, which is reached within about 4 miles of the shore. Moderate, however, as is the depth of the voes and sounds, the winding nature of the inlets, which, cutting inland on every hand, threaten ere long to add to the number of the islands, threaten the hard nature of the struggle that is constantly taking place between the land and the surge of the Atlantic Ocean and the North Sea. No spot, even on the Mainland, is 3 miles from the sea in all directions, and probably no equal land area on the face of the earth has such a large extent of coast-line. 'Probably no part of the British coast-line,' says Sir Archibald Geikie, 'affords such striking evidence of the violence of the waves as that which may be seen along the margin of the Shetlands. These islands are exposed to the unbroken fury at once of the German Ocean and of the Atlantic, while the tides and currents of both seas run round them with great rapidity. Hence their seaboard wears in many places an aspect of utter havoc and ruin. Against their eastern side the North Sea expends its full violence, tearing up the rocks from the craggy headlands, and rolling onwards far up into the most sheltered fiords. The island of Whalsey, for instance, lying off the east side of the Mainland, about the middle of the Shetland group, is completely sheltered from the gales of the Atlantic. Yet in the Bound Skerry of Whalsey [Out Skerries], the breakers of the North Sea have torn up masses of rock sometimes $8\frac{1}{2}$ tons in weight, and have heaped them together at a height of no less than 62 feet above high-water mark. Other blocks, ranging in bulk from 6 to 13 $\frac{1}{2}$ tons, have been actually quarried out of their place *in situ* at levels of from 70 to 74 feet above the sea. One block of 7 $\frac{1}{2}$ tons, lying 20 feet above the water, has been lifted from its bed and borne to a distance of 73 feet from SSE to NNW over abrupt opposing faces of rock as much as seven feet in height. On the west side of the Shetland Islands the fury of the Atlantic has produced scenes of devastation which it is hardly possibly adequately to describe. In stormy winters, huge blocks of stone are overturned or are removed from their native beds to a distance almost incredible. Dr Hibbert found that in the winter of 1802 a tabular mass, 8 feet 2 inches in length, by 7 feet in breadth, and 5 feet 1 inch in thickness, was dislodged from its bed and removed to a distance of from 80 to 90 feet. In 1820 he found that the bed from which a block had been carried the preceding winter, measured 17 $\frac{1}{2}$ feet by 7 feet, and 2 feet 8 inches in depth. The removed mass had been borne a distance of 30 feet, when it was shivered into thirteen or more fragments, some of which were carried still farther from 30 to 120 feet. A block of 9 feet 2 inches by 6 $\frac{1}{2}$ feet, and 4 feet thick, was hurled up the acclivity to a distance of 150 feet. "Such," he adds, "is the devastation that has taken place amidst this wreck of nature. Close to the Isle of Stenness is the Skerry of Eshaness [at the NW corner of St Magnus Bay], formidably rising from the sea, and showing on its westerly side a steep precipice, against which all the force of the Atlantic seems to have been expended; it affords refuge for myriads of kittiwakes, whose shrill cries, mingling with the dashing of the waters, wildly accord with the terrific scene

that is presented on every side." The result of this constant lashing of the surge has been to scarp the coasts of the Shetlands into the most rugged and fantastic cliffs, and to pierce them with long twilight caves. Dr Hibbert describes "a large cavernous aperture, 90 feet wide, which shows the commencement of two contiguous immense perforations, named the holes of Scrauda [for Scraada, near the NW corner of St Magnus Bay], where in one of them that runs 250 feet into the land the sea flows to the utmost extremity. Each has an opening at a distance from the ocean by which the light of the sun is partially admitted. Farther north other ravages of the ocean are displayed. But the most sublime scene is where a mural pile of porphyry, escaping the process of disintegration that is devastating the coast, appears to have been left as a sort of rampart against the inroads of the ocean. The Atlantic, when provoked by wintry gales, batters against it with all the force of real artillery—the waves having, in their repeated assaults, forced for themselves an entrance. This breach, named the Grind of the Navir, is widened every winter by the overwhelming surge, that, finding a passage through it, separates large stones from its sides, and forces them to a distance of 180 feet. In two or three spots the fragments which have been detached are brought together in immense heaps, that appear as an accumulation of cubical masses, the product of some quarry." In other places the progress of the ocean has left lonely stacks, or groups of columnar masses, at a distance from the cliffs. Such are the rocks to the S of Hillswick Ness [N side of St Magnus Bay], and the strange tower-like pinnacles in the same neighbourhood called the Drengre or Drongre, which, when seen from a distance, look like a small fleet of vessels with spread sails."

Further interesting details of a similar nature may be found in a paper by Mr Stevenson, the eminent lighthouse engineer, in the fourth volume of the *Proceedings of the Royal Society of Edinburgh* and in his book *On the Design and Construction of Harbours* (1864), as well as in a paper communicated to the British Association by Mr Peach in 1864. The tidal wave comes rushing with great speed and force from the westward, and causes everywhere round the coast currents and eddies of such a nature as to require the greatest care and skill in their navigation, and even in the calmest weather, at the northern and southern extremities, and in the narrow channels where the force of the current is greatest, there is always a considerable sea running.* The flowing tide seems to strike first at the NW, whence one branch passes down the W side, and along the N side of St Magnus Bay towards its head. The rush of water into the bay itself strikes on the southern shore, and while part flows out by the Sound of Papa, the rest is deflected eastward to the top of the bay, and meeting the current from the N side rushes with great force into the open space at Mavis Grind, N of Muckle Rooe. The portion that passes through the Sound of Papa is again united with the main current, which beats against the whole coast on its passage southward, till at Sum-burgh Head it turns off south-eastward through Sum-burgh Roost. Other branches in the extreme N rush through Bluemull and Yell Sounds, and meeting at the E side with the branch of the tidal wave that has passed round the N end of the group, produce very wild and dangerous cross currents, particularly all round Fetlar. At Out Skerries and Whalsey this current again divides, one branch passing onward to the SE and the other down the E coast of Mainland to meet the W coast current at Sum-burgh Roost. During the ebb the flow of the various currents is almost exactly reversed.

Set thus 'far amid the melancholy main,' and that main, too, of such a boisterous and uncertain nature, it is hardly to be wondered that the Shetland Islands long remained a *terra incognita*—of which the inhabitants of 'the adjacent islands of Great Britain and Ireland' had

only the vaguest idea, and that idea, like everything vague, almost entirely wrong—more especially when we consider that the only means of communication in the beginning of the 19th century was a sloop, which was supposed to sail from Aberdeen once a month for Lerwick; but as the start depended on the weather and the skipper, only some seven voyages a year were actually made. Yet notwithstanding this, one is hardly prepared to find in the edition of Bailey's Dictionary, published in 1800, Shetland described as consisting 'of about forty islands at the north of Scotland, where the sun does not set for two months in summer, and does not rise for two months in winter; or that somewhere about 1810 the Commissioners of Customs refused to pay bounty on some herring caught about Shetland in the winter, on the ground that, as the islands were surrounded by ice at that season of the year, no fish could possibly have been caught there; though perhaps such ignorance can hardly be wondered at when we reflect that about 1854 the Home Office authorities seem to have laboured under the delusion that Gaelic was the common dialect in Orkney. Except business men and an occasional traveller of scientific tastes, the islands had, before the publication of the *Pirate*, and still more the introduction of steam communication all the year round in 1853, practically no visitors at all, but this is now changed, and the northern archipelago has a very large tourist traffic. Nor is this to be wondered at, for the scenery of Shetland is far before that of Orkney, and the rocks are surpassed by nothing anywhere in Britain, and hardly equalled out of Cornwall—"a strange wild land of stacks and skerries, of voes and geos, and of cliffs and caves," with but few things to compare with the grand sweep of St Magnus Bay, as seen from the top of Sandness Hill, or with the cliffs of Foula. 'It would almost seem,' says Sheriff Rampini, 'as if the Shetland Islands had been specially prepared by nature to be the home of a Scandinavian people. None but the hardy Norsemen,

"Whose house, of yore,
Was on the foaming wave,"

would voluntarily have selected this desert of peat-moss and weathered rock—"this wilderness of mount and moor and moss, quhairin are divers great waters"—for his chosen resting place. For, after all, this "Old Rock," as its sons love to call it, is no land flowing with milk and honey, no Goshen, no Deseret, no Land of Promise, no

"Emerald isles of Paradise
Set in an azure sea."

The kindly fruits of the earth are conspicuous by their absence. There is never a tree on its whole surface, for the stunted specimens—twisted by the wind and lopped by the gales—which exist in some sheltered localities, scarcely deserve the name. It lies amidst boiling seas. Terrible tempests range round its coasts. There is scarcely a thatched cottage within its bounds from which the cruel sea has not taken toll of its inmates. Sky, sea, and shore are too often of a dull leaden hue. Its climate is damp and humid. It has ten months of winter, says a facetious traveller, and barely two of summer. Its shortest day is only five and a half hours long. Still there are compensations. If there are dayless winters, there are also nightless summers. In the months of June and July darkness is unknown. The sun sets only to rise again. One can read small print at midnight, and the lark—"Our Lady's hen," as the country people used to call it—may be heard singing at one in the morning. So, too, though the winters are long, the cold is never intense. If the winter days are dark, the nights are illuminated with the brilliant rays of the Aurora Borealis. Above all, if nature has been chary in her gifts of luxuries to the rich—in the fruits and flowers of more genial and southern climates—she has made up for this in her abundant supply of necessities to the poor. Peats and fish and oil—fuel and food and light—are the heritage

* When a south-easterly gale is blowing against the run of flood tide, Sum-burgh Roost, at the S end of Mainland, is probably the wildest portion of sea all round the British coast.

of every Shetland peasant. Thus, though in his lot there may be great poverty, there never can be, except by his own indolence and want of energy, actual privation. As for the scenery of this lone, northern land, it has a subtle charm which is all its own. It is only within the last few years that the attractions of the Shetland landscape have begun to be recognised. It was reserved for Sir Walter Scott, whose wonderful eye for the picturesque is not the least attribute of his genius, to discover its capability as a theme for graphic and picturesque description. But even Sir Walter himself failed to perceive wherein its principal charm lay. Grand and romantic as is the rock scenery of its western coasts, tender and touching as on a calm summer eve is the beauty of its quiet lochs and solitary lochs, the true beauty of the Shetland landscape consists in its unequalled effects of light and shade. Other parts of Scotland can boast of as beetling crags, as solitary stacks, as gloomy caves, as peaceful beaches, as reposeful nooks as any to be seen within its limits; but none can approach it in the weird and splendid variety of its aerial aspects. Its gorgeous sunsets, its opaline dawns, the changing lights and shadows on its green hillsides, the diversified hues and colours of its seas, have a fascination and a spell which only those who have seen them can adequately understand. From these results the passionate attachment of the islanders to their native land—an attachment so intense and so deep-rooted as to produce at times, in the case of Shetland girls in domestic service in the south, a peculiar and aggravated form of nostalgia, known in the faculty by the name of *morbus islandicus*. From these, also, results that atmosphere of mystery and romance which has always gathered around the very name of Ultima Thule. What Britain was to Rome, according to Lord Macaulay, in the days of Procopius, the Shetland Islands have always been to the rest of Scotland. Even if we discount the fertile products of local tradition and superstition—the legends of trows and elves and fairies, of giants and gay carles, of mermaids and seal maidens, of *bokies* (bogies) and *grùllies* (gruesome beings), of Niogles and water-horses, of Finns and ghosts and devils—in which the native mythology of the islands abounded, there still remains sufficient to satisfy the imagination of the most ardent lover of the marvellous. The works of the older travellers are full of the wonders of this distant and enchanted land. Brand, whose credulity was only equalled by his piety, has preserved for us a long list of the *ferries* of which the islands boasted in his day. On the top of a hill in Unst, he solemnly assures us, there was a hole, covered with a slate, down which a Dutch skipper let eighteen fathoms of rope, without finding a bottom. In the kirk-yard of Papa Stour was a gravestone which had floated ashore with a dead man tied to it. There was a gentleman's house at Udsta in Fetlar, where the needle turned to all the points of the compass. It was a well-known fact that no cats would ever stay in the island of Vaila. It was an equally well-known fact that not only were no mice found in the islands of Burra and Haskasey, but that earth taken from them and sprinkled in other places, would infallibly drive them away. Nor is the marvellous confined only to the soil. It attaches to its history as well. Few countries so limited in area can boast of so thrilling, so romantic—I was almost going to say—so pathetic a history; nor one which is so sharply defined in the various stages of its progress. Alike in its Pre-historic, its Heroic, its Feudal, and its Renasant age—although these are each and all of them an age later than in other parts of the kingdom—it excites in us an interest entirely disproportionate to its territorial extent, while, at the same time, presenting us with almost typical representations of the social and political characteristics of these various phases of civilisation. And though the materials for its annals are meagre and few, consisting only of the mute records of the Brochs, the doubtful testimony of Skaldic songs, and the stained and mutilated fragments of old charters and parchments, they

have attracted the attention of antiquarians and scholars as the chronicles and archives of no other country have done.

There are a large number of little brooks, many of which near their mouths contain good trout. There are also a large number of fresh water lochs, many of them of fair size. The principal are the lochs of Cliff, Watlea, Stourholl, and Snaravoe in Unst; Gossa Water, Lumbister, Colvister, Vatsetter, and Kettlester in Yell; Papil Water in Fetlar; Moosa Water, Muckle Lunga Water, Tonga Water, Roer Water, Gluss Water, Eela Water, Punds Water, and Burrelland Loch, in the N and NW of Mainland; Clousta Loch, Vaara Loch, Sulma Water, Burga Water, Lunga Water, Vaxterby Loch, and Gossa Water in the centre (W) of Mainland; and Strom Loch, Tingwall Loch, Vatsetter Loch, and Loch of Spiggie in the centre and S. Formerly the fishing was poor, as every means legal and illegal were used to destroy the trout, but since 1833, when Shetland was erected into a fishery district, matters have much improved. The close time extends from 10 September to 24 February, both inclusive; but the rod season lasts from 1 February to 15 November, both days inclusive. In many of the lochs the fishing is free, and for most of the others the necessary permission is by no means difficult to obtain.

The land area of the islands is 551·4 miles or 352,889 acres. The inhabited islands, with their populations in 1881 and 1891 respectively, are as follows:—Bound Skerry (2; 2), Bressay (847; 799), Bruray, one of the Out Skerries (59; 54), East Burra (215; 207), West Burra (427; 488), Fair Isle (214; 223), Fetlar (431; 363), Foula (267; 239), Grunay, one of the Out Skerries (25; 25), Hevera or South Havra (35; 24), Hildasay (7; 30), Holm of Papil or Papa (4; 2), Housay, one of the Out Skerries (71; 86), Langa, in Tingwall (4; 0), Linga, close to Hildasay (10; 15), Linga, N of Vaila (13; 8), Muckle Flugga (3; 3), Muckle Roe (230; 213), Noss (3; 3), Oxna (30; 31), Papa (14; 23), Papa Stour (254; 244), Mainland (20,821; 19,741), Trondra (133; 154), Unst (2173; 2269), Uyea in Unst (5; 8), Vaila (3; 19), Whalsey (870; 927), and Yell (2529; 2511).

Shetland has a much more equable temperature throughout the year than most places on the mainland of Great Britain, the total average range of temperature being, as in Orkney, about 16°, while at Thurso it is 20°, at Leith 22°, and at London 25°. The general remarks made as to the temperature of Orkney apply equally here, except that the averages are from 1° to 2° lower, except for August, when they are higher in the same proportion. The variations of temperature are, however, very rapid, and even at midsummer wind from the N or NW causes a fall at once. The mean average rainfall is considerably above that of Orkney, being about 48·6 inches, and this dampness renders the climate unpleasant to strangers, though the natives do not seem to find it unhealthy. The prevailing winds are from NW to SW, and in autumn the gales from these quarters are so heavy as often seriously to injure the crops. Next in frequency are winds from N and NE, which are generally accompanied by settled weather, but though dry and healthy they are bitterly cold, and as they are common in spring they often check the progress of vegetation. The spring is thus generally cold and late, and can hardly be said to begin before the end of April, and there is but little real warmth till the middle of June, but from that time till summer terminates between the middle and end of September the growth of vegetation is very rapid. Sometimes sudden and dangerous gales occur about midsummer, and in one on 20 July 1881 ten 'sixern' boats belonging to the North Isles were lost and 58 persons drowned. Autumn extends to about the middle of October, and from that time till the end of March there is an almost constant succession of high winds and heavy rains. Fogs are frequent in May and June, and the few thunderstorms that occur generally break in winter during high winds and long-continued falls of rain or snow. Owing to the high latitude the summer

evenings are long and in fine weather charming. At the longest day the sun rises at 38 minutes past 2 and sets at 33 minutes past 9; but even after his departure he leaves his glory behind in the bright glow of delicate tints of violet, yellow, and green that lie along the northern horizon. For a month at this season the light is so strong all night through that small print may be read without difficulty. At the shortest day the sun rises at 12 minutes past 9, and sets at 59 minutes past 2; but the long nights are often lit up by very brilliant displays of aurora borealis. Stray specimens of walrus that had wandered too far S have been seen on several occasions. The common seal and grey seal, which were at one time very numerous, are now greatly reduced in numbers; but schools of ca'ing whales are very common, no fewer than 1540, it is said, having been killed at Quendale Bay within two hours on 22 Sept. 1845; and solitary specimens of the razor-backed whale, the narwhal, and the manatee are known to have occurred. Among the birds of prey are the golden eagle, the white-tailed eagle, the osprey, the Greenland falcon, the Iceland falcon, the peregrine falcon, and all the common hawks, except the sparrowhawk, which is rare, as are also the first three birds mentioned. Ravens are common, but rooks are rare; and grouse, though introduced, have never prospered. Among the rarer plants may be mentioned *Cochlearia officinalis* at Out Stack; *Ophioglossum vulgatum* and *Polypodium dryopteris*, near Ordale House; *Hymenophyllum Wilsoni*, at Skaw; *Tridentalis Europæa*, at Hermaness; *Saxifraga oppositifolia*, at Sand Voe; and *Nymphaea alba*, in a loch at the base of Ronas Hill.

Geology.—The geology of Shetland presents certain remarkable features which never fail to arrest the attention of visitors to those regions. The great development of the metamorphic crystalline rocks, containing an abundant series of minerals, has become widely known through the descriptions of Dr Hibbert and Professor Heddle; while the isolated masses of Old Red Sandstone, with their associated igneous rocks, give rise to much of the striking scenery along the seaboard.

Beginning with the stratified metamorphic rocks, they are divisible into two groups with well-marked lithological characters—(1) dark blue and grey clay slates and schists, with occasional bands of limestone; (2) coarse micaceous and hornblende gneiss, with quartzites, chlorite-schists, mica-schists, and limestones. The members of the former group occupy a considerable tract on the Mainland, extending from the S promontory at Fitful Head, N by the Cliff Hills to Laxfirth Voe; while the more highly crystalline gneissose series covers wide areas in Tingwall, Weisdale, Nesting, Lunnasting, Delting, and along the E seaboard of Northmaven. Along the line of junction between these two groups, extending from Scalloway N by Tingwall Firth to Laxfirth Voe, the strata are generally inclined to the WNW; and hence, if we take the order of superposition as an index of the succession, we might naturally infer that the clay slate group represents the oldest members of the metamorphic series. Beds of limestone occur in this group at Ocaquoy and Fladabister, but their development is insignificant compared with the massive limestones of Tingwall and Weisdale. At Tingwall the massive limestones are overlaid by coarse micaceous and hornblende gneiss, which is the prevailing rock in the centre of the Mainland, forming, indeed, all the great parallel ridges between Scalloway and Weisdale Voe, except the promontory between Whiteness Voe and Stromness Voe. Another great belt of limestone crops out in Weisdale Voe, and extends N to Dales Voe in Delting. To the W of this limestone zone the strata consist of coarse micaceous gneiss, mica-schists, and quartzites, which, both in Weisdale and Delting, are inclined to the WNW and NW at angles varying from 60° to 70°. The metamorphic rocks that have become famous for the variety and beauty of the minerals contained in them, are to be found along the E seaboard of Northmaven, and on the Hillswick promontory between Sandwick and Urie Firth. The latter locality

has been carefully explored by Dr Heddle, who has published detailed descriptions of the minerals in the *Mineralogical Magazine*. From his descriptions, and those of Dr Hibbert, it appears that the strata forming the Hillswick promontory consist of mica-schist, chlorite-schist, and hornblende gneiss, pierced by numerous dykes and veins of pink quartz-felsite—evidently offshoots from the great intrusive granite mass so largely developed in Northmaven. Among the minerals found in the rocks on this promontory, the following may be mentioned: hornblende, actinolite, epidote, anthophyllite, precious serpentine, steatite, chlorite, kyanite, calcite, and fluor-spar.

Again, along the E seaboard of Northmaven, between Ollaberry and Fethaland Point, there are several excellent mineral localities in the metamorphic series. In Colafirth Voe, not far to the N of Ollaberry, the strata consist of chlorite-schist, margarodite-schist, hornblende rock, hornblende-gneiss, serpentine with chrysotile, which are flanked on the W by the great granitic mass of the Biurgs. Perhaps the most interesting of the sections in this part of Northmaven occurs at Fethaland, where some beautiful minerals have been obtained. The peninsula of Fethaland is composed mainly of gabbro, a crystalline rock consisting of diallage and trichile feldspar. Above Kleber Geo excellent specimens of the former mineral are to be found. In this bay chlorite-schist, actinolite-schist, and steatite occur—indeed, the name Kleber Geo is given to this locality from the occurrence of steatite or soap-stone, which is termed 'Kleber' or 'Klemmer stone' by the Shetlanders. Many tourists purposely visit this locality, to examine the curious sculptures on the weathered face of the steatite, in the form of squares and circles. From this locality the following minerals have also been obtained: ilmenite, magnetite, pyrite, asbestos, and amianthus. Not far to the S, in Pundy Geo, Professor Heddle found a band of chlorite of singular beauty, containing octahedral crystals of magnetite.

The island of Yell is composed of coarsely crystalline gneiss with granite veins, the prolongation towards the N of the gneissose strata of the Mainland. Similar strata are met with in Whalsey and in the Out Skerries of Whalsey, but in the latter islets the gneiss is associated with crystalline limestone.

The metamorphic series in Unst and Fetlar presents several interesting features on account of the remarkable development of serpentine and certain minerals associated with it. The prominent ridge of high ground along the W coast of Unst is composed of gneiss, inclined to the SE, succeeded by mica-schist, chlorite-schist, and graphite-schist. The schistose strata overlying the gneiss are well developed in the hilly ground in the N of the island, between Burra Fiord and Norwick Bay. At Cliff a band of limestone is associated with these schists, which, however, has not been traced across the island. The graphitic schists pass underneath the serpentine at the S end of the island near Bellmont, and again on the E coast in Norwick Bay. The serpentine crosses the island from SW to NE, extending from the Gallow Hill near Bellmont to the Nivv Hill beyond Haroldswick Bay, varying in breadth from $\frac{1}{2}$ to 2 miles. It is widely known, on account of the veins of chromite found at Hagdale, which will be referred to under the section on Economic Minerals. Native copper and malachite have also been found on the S side of Haroldswick Bay, and at other localities asbestos, brucite, talc, magnetite, and arragonite have been obtained. There is one celebrated locality in this island where talc can be got of an exquisite apple-green tint—indeed, it would be difficult to obtain finer specimens of this mineral. The locality, which was discovered by Dr Heddle, is situated in the NE corner of Haroldswick Bay, in Quin Geo, where it is associated with dolomite, magnetite, and other minerals. To the E of this mass of serpentine there is a belt of gabbro, forming a parallel strip upwards of a mile in breadth, flanked on the E by chlorite-schists and mica-schists, exposed on the shore near Muness Castle. At the extreme SE promontory there

is another small area of gabbro resembling that on the Vord Hill and on Balta Island.

The group of strata just described are continued towards the S in the island of Fetlar. In the centre of the island the chlorite-schists and graphitic-schists form a low arch, throwing off to the E and W gabbro, diorite, and serpentine. Along the W seaboard the gabbro and diorite are succeeded by coarse micaceous gneiss; while towards the E, in Gruting Bay and at Hellinabretta, the micaceous, chloritic, and graphitic schists again appear.

Only a passing reference can be made to the large mass of diorite in Northmaven, stretching from Mavis Grind to Roeness Voe, and to the remarkable epidotic syenite described by Hibbert near Loch Spiggie in Dunrossness, which is traceable through the islands lying to the W of the Cliff Hills to the Mainland at Bixtetter.

The isolated relics of Old Red Sandstone still preserved to us in Shetland clearly show what an important development of this formation is to be found in those islands. Fossils are not very plentiful throughout the strata, but recently the remains of plants have been obtained at new localities in the neighbourhood of Walls, in altered sandstones and flags. This discovery has resulted in the addition of about 40 square miles of ground to the area occupied by the Old Red Sandstone.

Along the E seaboard of the Mainland the representatives of this formation occur at intervals between Rovey Head, N of Lerwick, to Sumburgh Head, and may be grouped in the following order:—

5. Flaggy series of Bressay.
4. Lerwick Grits and Sandstones.
3. Rovey Head Conglomerates.
2. Brenista Flags.
1. Basement breccia resting unconformably on the crystalline rocks.

The breccia forming the base of this formation on the E seaboard is seen only at a few localities owing to the existence of faults, which bring different zones into conjunction with the metamorphic series. In the neighbourhood of East Quarff, at Fladabister, and again near Loch Spiggie in Dunrossness, the unconformable junction is admirably seen, the breccia being composed of angular fragments of the underlying rocks. The red and chocolate coloured flags of the second subdivision are to be found capping the breccia between Fladabister and East Quarff, but the best exposure of them is to be found on Brenista Ness, where they are gently inclined to the E, and conformably overlain in Gulberwick Bay by coarse conglomerates belonging to the third group. The latter can be traced at intervals N to Rovey Head, situated about 2 miles N of Lerwick, where, by means of a fault, they are thrown against the crystalline schists. Resting on these conglomerates, and forming the hilly ground in the neighbourhood of Lerwick, we find a succession of grey massive sandstones and grits with shaly partings which occasionally yield plant remains in the quarries to the S of the town. The members of this group are followed in regular order by a great development of flags, shales, and thin-bedded sandstones of the island of Bressay, in which specimens of *Calamites Canadensis* have been found. An admirable section of the flaggy series of Bressay is to be seen in the great sea-cliff of Noup Head (477 feet), at the base of which certain dark shales with calcareous nodules occur, resembling the well-known fish-bed of the Moray Firth basin.

When we pass to the W side of the Mainland there is a remarkable change in the features presented by this formation. Instead of an unbroken succession of sedimentary deposits, there is a striking development of contemporaneous and intrusive igneous rocks forming noble cliffs in Northmaven, Sandsting, and in Papa Stour. There can be little doubt that during the deposition of portion of the strata on the E side of Shetland volcanoes must have been active in the W area, discharging sheets of lava and tuffs which were spread over the sea-floor and buried underneath the accumu-

lating sediments. But in addition to the volcanic materials ejected at the surface, there are extensive areas occupied by granite and felsite which were injected amongst the sedimentary deposits and crystallised at a considerable depth. Before indicating the areas where these igneous rocks occur, reference must be made to the tract of highly altered strata in Weisdale, Walls, Sandsting, and Sandness. Till the discovery of numerous plant remains in these altered strata in 1878 by Messrs Peach and Horne, they had been grouped with the metamorphic series of Shetland; but the nature of the plant remains, comprising specimens of *Psilophyton princeps* and *Lepidodendron nothum*, clearly showed that they are merely an altered portion of the Old Red Sandstone. This tract of altered strata is bounded by two great faults, one extending from Aith Voe in Aithsting to Selie Voe in Sandsting, and the other from the island of Papa Little, by Clouster Voe, Burra Firth, to Sandness Hill. There is a small patch of sandstones and shales at Melby resembling the unaltered beds on the E seaboard.

The contemporaneous lavas and tuffs associated with this formation occur at several localities on the W side of the Mainland. The best exposure, however, is to be found in Northmaven between Stenness and Ockren Head, where they are thrown into a synclinal fold, the axis of which runs in an N and S direction from Stenness by Hanna Voe to the mouth of Roeness Voe. On the S side of the latter sea-loch they are brought into conjunction with a great intrusive sheet of pink felsite by a fault which is admirably seen on the sea-cliff. Similar interbedded lavas and tuffs are to be found at various points round the shores of Papa Stour, where they are overspread by a later sheet of pink felsite. A bed of diabase porphyrite is to be found in the Holm of Melby, close to Papa Stour, while at Clouster Voe in Aithsting, on the Mainland, there are dark green diabase lavas associated with the indurated flags and shales. The only relic of these interbedded rocks on the E seaboard occurs on the E shore of Bressay, where a thin band of tuff is intercalated between the flagstones. Interesting as these volcanic ejectamenta doubtless are, there are still more striking manifestations of the volcanic activity which characterised that period, presented to us in the form of sheets, dykes, and necks. Of these, the intrusive sheets are the most important, as they cover large areas in Northmaven and Sandsting on the Mainland, a great part of Meikle Roe, a portion of Vementry, and nearly the whole of Papa Stour. The masses in Northmaven, Sandsting, Vementry, and Meikle Roe consist of coarse granite composed mainly of Pink orthoclase, feldspar, and quartz, with only a small quantity of mica, while the great sheet in Papa Stour is made up of pink spherulitic felsite. On the E shore of Bressay and in the island of Noss there are traces of old volcanic vents or necks from which some of the igneous materials were discharged.

The glacial phenomena of Shetland are of special interest on account of the evidence in favour of a remarkable extension of the Scandinavian ice sheet in the North Sea during the primary glaciation. From recent researches it would appear that along the E seaboard of the Mainland and in Whalsey, the Out Skerries of Whalsey, Yell, and Unst, the general trend of the glacial striae is W, WSW, SW, and, in certain instances, SSW. But when we cross to the W side of the Mainland the direction of the ice-markings swings round to the NW and NNW. These are supposed to have been produced by the Scandinavian ice sheet crossing the islands towards the Atlantic during the primary glaciation. A detailed examination of the boulder clay sections on the W side of the Mainland and in the N islands points to the conclusion that stones have been transported in the *moraine profonde* from the E to the W of these islands. For instance, blocks of serpentine and gabbro derived from the E side of the Vallafield ridge in Unst are found in the boulder clay on the W coast, while striated blocks of flags and grits derived from the E side of the Mainland between Lerwick and Dun-

rossness are also found in this deposit on the W coast. These facts evidently point to an ice movement from E to W, but there are also certain data which point to a later glaciation, when local glaciers radiated from the more elevated parts of the Mainland and the N islands. During this period the direction of ice flow between Lerwick and Dunrossness was towards the SE, when certain morainic deposits were accumulated containing fragments of slates from the Cliff Hills.

Economic Minerals.—Some of the mineral localities in Shetland have been indicated in the foregoing section, but there are certain mineral veins demanding special notice. In Unst a valuable vein of chromite occurs in the serpentine on the SE slope of the Heog Hills. According to Dr Heddle this vein has yielded thousands of tons of ore, and runs in an E and W direction, not continuously but in irregular 'bunches,' throwing one or two offsets near Bunes. The chromite at Hagdale is associated with Emerald Nickel, Arragonite, Kammererite, and Williamsonite. Another important vein of ore occurs at the Sandlodge mine on the Mainland, from which is obtained sparry carbonate of iron, or chalybite and copper pyrites. With these are associated native copper, limonite, chalcopryite, fibrous malachite, and psilomelane. According to Hibbert there is evidence of the presence of magnetic iron in a small hill in Whalsey proved by the deflection of the magnetic needle. Magnetite also occurs at Fethaland Point on the Mainland, and at Osta in Fetlar. Iron pyrites occur at Garthness and at Fethaland. Excellent building stone is obtained from various members of the Old Red Sandstone on the E side of the Mainland, especially from the Lerwick grits and sandstones.

Soils and agriculture.—The soil is of much the same nature as in Orkney, but there is less inducement to cultivate even the good alluvial soil along many of the voes in consequence of the damp and stormy climate. There is in Mainland and Yell a considerable extent of peat-moss, which is cut for fuel; but this has been done in many cases so injudiciously that the heavy rains have washed away the whole of the lower soil. The mosses abound in roots and stems of trees, which show that the islands have not always been in their present treeless condition. The land is held as in Orkney, the original udal tenure having now in the majority of cases been converted into feudal holding by the same causes as are noticed in the article on the Orkney Islands. At Tingwall and Dunrossness, and in Bressay, Whalsey, and Unst, there are some good farms—one in Bressay indeed being almost as early as any farm in the north of Scotland—but the uncertainty of the returns from the grain crops is a great bar to extensive agricultural projects, and the feeling is yearly gaining ground that improvement of land should proceed in the direction of grazing and green crops. The harvest in average years is generally so late, and the weather so uncertain, that crops which promise all that could be wished to-day are to-morrow blackened and blasted by an unexpected change to rain, sleet, or snow. No single cause, however, is so injurious as the drift which in stormy weather is blown from the sea over the land, carrying ruin in its train. The rest of Mainland and by far the greater part of Yell is pasture or peat-moss; and Unst and Fetlar, which are noted for the production of butter, abound in excellent pasture land, there being almost no moss. The small average size of the holdings, the want of roads, rents paid till recently in kind, and the many exactions piled on tenants by the crown donatories or their tacksmen, all operated against any improvement in Shetland agriculture; and just as in the case of Orkney and the failure of the kelp trade, so in Shetland such slight improvement as has taken place is due to the failure of the potato crop in 1847-49. The small holdings still operate against improvement, more than half of the arable land being held by crofters—and by crofters too who, looking on a croft and its accompanying scathold or right to hill-grazing as an absolute necessary of existence, yet cannot possibly, like their Orcadian brethren, exist by agriculture alone, but look

to the sea to supply their chief means of living. The Crofters' Holdings Act of 1886 extends to Shetland, and has effected a great amount of good. In 1892 the Commissioners adjudicated upon 963 applications for fair rent, of which 706 were adjusted, 136 withdrawn, and 98 dismissed. Of the 706 the rents were considerably reduced, and only about one-fifth of the arrears was ordered to be paid. In a case which occurred in the island of Bressay it was decided that a tenant who paid not less than £30 per annum on glebe land was not a crofter according to the meaning of the Act. The fundamental idea on which the old system of agriculture was based was the 'toun' or township, the nature of which has been already sufficiently indicated in the article on Orkney; but in Shetland it is much more of a living power than in the other group of islands, and runrig itself is not yet altogether a thing of the past. The tillage is frequently done by the long-handled spade, and the crops are oats, bere, turnips, and potatoes, the latter occupying about a fourth of the holding, which averages from 3 to 10 acres. There is no rotation, and land is rarely, if ever, allowed to lie fallow. The only manure is sea-weed or large quantities of peat-earth that has been used for bedding cattle. Hay is practically unknown. Potatoes became a common article of diet about the middle of the 18th century, and turnips were introduced early in the 19th. Cabbages, which were introduced by Cromwell's soldiers, are kept during winter in small walled patches called plantie-cruives, and transplanted in summer.* Of a total of 3839 holdings, 3765 are of 50 acres or under, 34 between 50 and 100, 30 between 100 and 300, 7 between 300 and 500, and 3 over 500; and the average area of the smaller holdings is 9½ acres. The ground under crop and permanent pasture rose from 50,454 in 1870 to 55,383 in 1884, and fell again in 1894 to 55,484. The acreage under the various crops at different dates is given in the following table:—

Year.	Barley or Bere.	Oats.	Turnips.	Potatoes.
1866	2139	8695	347	2609
1874	2393	8606	505	2831
1884	2531	7789	1066	3344
1894	2049	7266	1265	3159

About 400 acres are annually under other green crops; about 511 acres on the large farms are allowed to lie fallow; and there are 39,714 acres under permanent pasture.

The agricultural live-stock in the county at different dates is shown in the following table:—

Year.	Cattle.	Horses.	Sheep.	Pigs.	Total.
1868	20,255	...	73,506	5895	...
1874	21,683	5951	86,718	4853	119,205
1884	22,373	5345	84,008	3753	115,474
1894	19,028	5344	101,413	2877	128,662

The cattle, which seem to be descended from Norwegian animals, are small, and somewhat resemble Alderneys. They are well shaped and flossy, and when fattened weigh from 2 to 3 cwt. They are thoroughly suited for a country where the grazing is poor; are good milkers when well fed; and their flesh forms tender and finely flavoured beef. The sheep are, like the native sheep of Orkney and the Hebrides, small animals of Scandinavian origin, but as bones of similar animals are found in the brochs, they must have been introduced into the island before the Norwegian occupation.

* 'The liberal custom of the country,' says Sir Walter Scott 'permits any person who has occasion for such a convenience to select out of the unenclosed moorland a small patch, which he surrounds with a dry-stone wall, and cultivates as a kail-yard, till he exhausts the soil with cropping, and then he deserts it and incloses another. This liberty is so far from inferring an invasion of the right of proprietor and tenant that the last degree of contempt is inferred of an avaricious man when a Zetlander says he would not hold a *plantie-cruive* of him.'

Though small they are very active and even intelligent, and their wool is noted for its fine quality, the best of it being moorat, *i.e.*, yellow brown in colour. The animals are not shorn in the usual way, but the fleece is removed by 'rooing' or plucking. The finest wool is procured from the neck and shoulders. The mutton is excellent. Considerable numbers of black-faced, Cheviot, and half-bred sheep are now, however, to be found in various districts. The 'horses' are the well-known Shetland ponies, from 9 to 10 hands high, and the best animals are black, bay, or iron-grey in colour. They are supposed also to have a Scandinavian origin, and to owe their dwarfed condition to neglect and hard living, for they are seldom or never admitted within the walls of a building; and, ranging about in herds in a half wild state over the commons and hills, they have to find their own food both winter and summer. A considerable number are said to perish every winter from exposure and hunger, but this seems to weed out the weak specimens, and the animals, which are in great demand for children, as well as for work in coal pits, are strong, spirited, and enduring far beyond the proportion of their bone and bulk. They do not reach maturity till about eight or nine years old, and till they are three or four their bodies are covered with long woolly-looking hair. The pigs, like all the other domestic animals of Shetland, are small and peculiar. They have small bones, erect and pointed ears, and very strong snouts. The back is short and arched, the legs long, and the body covered with long bristly hair, varying in colour from dunish white to black, and from which formerly the ropes used by the cragmen on the 'banks' were made. They are hardy and active, and as they are generally allowed to run about wild, they do a great deal of mischief, especially where the soil is sandy. Poultry of all kinds, particularly geese, are extensively kept, and the annual exports of eggs alone are worth probably nearly £80,000 a year.

Industries.—Fish of all kinds are plentiful round the shores of the islands, and for centuries the great mainstay of the Shetlanders was the ling or haaf (Scand. *hav* or *haaf*; 'the deep sea') fishing, but of late years the herring fishing has been so enormously developed as to throw the haaf fishing quite into the shade. The herring fishing in the Shetland seas was practically in the hands of the Dutch fishermen till the early part of the 18th century, when a French fleet destroyed a large number of their busses, and the field began to be left open to home enterprise. During the Napoleonic wars the Hollanders had to keep away from their old ground, and advantage was taken of the opportunity by the proprietors along the coast to get the fishings into their own hands, each of their crofters being bound as a condition of his tenancy to assist in fitting out and manning a boat, as well as to assist or provide assistance in curing operations. Proprietors who were non-resident, or did not care to embark in the fishing, leased their rights and privileges to fish-curers, and as both classes set up shops for the supply of their tenants, goods being given in exchange for produce and work, this was really the origin of what is known as the Truck System of Shetland, which was investigated by a Government Commissioner in 1872, and which the force of public opinion has now almost, if not altogether, stopped, much to the welfare of the Shetland fishing community. The Dutch have never recovered their old hold, though a large number of booms and luggers still make their appearance every year. These gather in Bressay Sound, and during the period that intervenes between their arrival and St John's Mass, when they begin to fish, the sailors land at Lerwick and hold high festival, pony-riding affording great amusement, both to themselves and to those who have the good fortune to witness their brilliant exploits in horsemanship (see the account of this in Campbell's pamphlet on the *Great White Herring Fishery*, and in Dr Ker's *Shetland and the Shetlanders in Good Words* for 1866). From 1834 to 1842 the boats engaged in the Shetland herring fishing were about 1100 annually, but as the average catch over

the whole fleet was sometimes as low as 5 barrels, and never during that period more than 60, the number gradually diminished, till, in 1874, only 96 boats were here so employed, the total catch being 1180 barrels; by 1879 the number of boats had increased to 206, and the catch to 8755 barrels; while in 1893 with 466 boats the catch was 91,532 barrels. The boats are gathered from all the fishing ports on the N and E coasts, as well as from England, Ireland, and the Isle of Man, and they are scattered round the islands at about 100 different stations, the chief of which are Lerwick and Balta Sound. The great development of the industry since 1875 seems to be due to the introduction of first-class decked boats in place of the old 'sixern' or six-oared boats used by the Shetland fishermen. These—lineal descendants of the lang-schip of the Vikings—were about 20 feet in the keel, $6\frac{1}{2}$ wide, and 3 deep. They carried a lug-sail, containing about 60 yards of canvas, and though the Shetlanders managed them with the greatest skill, and would even venture in them in rough weather long distances from land, they were quite helpless in gales. Shetland forms one of the Scottish fishery districts, and there were, belonging to the islands in 1893, 808 boats, employing 2859 resident fishermen and boys. The principal stations for first-class boats were Lerwick with 70, Whalsey with 21, Scalloway with 19, Burra Isle with 13, Aithsvoe with 12, Uyea Sound with 12, and Mid Yell with 10; for second-class boats, Dunrossness with 12, Levenwick with 11, Fethaland with 12, and Stennis with 10; and for third-class boats, Scalloway with 38, Dunrossness with 28, Hillswick with 25, Lerwick with 21, Whalsey with 19, Fethaland with 13, Vaila Sound with 13, Burra Isle with 12, and Mid Yell with 12. The boats were valued at £23,247, the nets at £21,040, and the lines at £5291; and the total number of persons employed in connection with them, inclusive of fishermen, was 4748. The deep-sea fishing was in the hands of German merchants down to 1712, when a high duty imposed on imported salt and the establishment of a custom house at Lerwick proved fatal to their interests. The fish caught are cod, ling, and tusk, the latter a white and flaky-fleshed fish, never seen S of the Moray Firth, and more plentiful on the E side of Shetland than on the W. The dried cod is exported, but the tusk is mostly used at home. Fully one-half—sometimes nearly two-thirds—of the total quantity of cod, ling, and hake captured in the whole of Scotland come from Shetland, the number of fish having in 1893 been 1,860,304 out of a total for the whole of Scotland of 3,960,730. The smack fishing is carried on about the Faroe islands and Iceland. Conger, skate, and halibut (locally turbot) are also caught, and in 1876 boxes of these packed in ice began to be sent to the south markets. A small quantity of kelp is still made along the shores of Yell Sound, but besides the fishing the great Shetland industry is the knitting of woollen articles from the fine worsted yarn made from the wool of the native sheep. The manufacture of coarse stockings, gloves, and nightcaps has long been carried on, and an extensive trade is done every year with the Dutch and German fishermen. When trade with Leith was developed the articles were sent to that port, and so great was the success of the industry that in one of the early years of the 19th century the stockings alone that were exported were estimated to be worth £17,000. The manufacture of shawls was introduced in 1837-39, and the demand for them became common in 1840. In 1850 veils were introduced, and since then neckties and various fancy articles have been tried. Each district has a special 'line,' Northmaven producing underclothing; Westing, stockings; Walls and Sandsting, socks and small shawls; Whiteness and Weisdale, fancy coloured gloves; and Lerwick, shawls and veils. The fine, soft, and light but very warm Shetland flannel or tweed is manufactured in Northmaven, Delting, and Lunnasting. The commerce is noted under LERWICK, as is also the means of communication with the mainland. Internal communication, though greatly improved since the end of the 18th century, when there

were practically no roads, still leaves much to be desired. In 1894-95 breakwater works in connection with the formation of a fishing-boat shelter were erected at Symbister (Whalsey), assisted by a Treasury grant of £1650. There are lighthouses at Sumburgh Head, Bressay, Bound Skerry (Whalsey), North Unst, Fair Isle, and Lerwick.

The old miserable, windowless, chimneyless hut, with the byre forming the antechamber to the family dwelling room, has now almost disappeared, and in most cases the byre is a separate building, while the cottage, poor and thatched though it be, has a 'but' and a 'ben,' the latter generally floored, but the former with clay floor, and very often still without a chimney. The inhabitants retain many of the old Scandinavian peculiarities of character as well as feature and complexion. The men are a fine powerful race, with an active swinging walk, and though they possess much hardihood and power of physical endurance, they are gentle in their manner and style of speech. Their acquaintance with the perils of the deep and the risks incident to egg-gathering lead to the same cool and matter-of-fact way of treating danger and death that has been already remarked on in the article on Orkney. They are markedly religious, hospitable, and outwardly courteous, but one who is well acquainted with them finds more underneath, and in many cases it seems as if Scott's opinion of 'jimp honest' were no calumny, and that this is so is probably due to the long period of oppression they had to endure after the islands were annexed to the Scottish crown, as well as to the false system which eventuated in the quasi-truck system, and which was strongly calculated to produce hypocrisy. To the same cause is probably to be assigned the Shetlander's horror of law and lawyers, as well as his intense dislike to bind himself by any written obligation. The dislike for Scotland and the Scotch, produced by the oppressions of the mediæval lords of the islands, has also lingered to our own time and seriously retarded the progress of the islands, though probably not many are of opinion with the sailor mentioned by Dr Ker, that the mainland has never given them anything but 'dear meal and greedy ministers.' A fisherman who has a farm, the Shetlander retains all that reverence for the marvellous that seems peculiar to sea-faring folk. 'He still occasionally sees krakens, sea-serpents, and other monsters of the deep. Although, of course, he does not believe in them, he still dislikes to talk about trows and fairies, mermen and mermaids, ghosts, apparitions, and warnings. . . . He still regrets the change from the Old Style to the New, the growing indifference to the observance of old holidays and customs, the transformation of the old Norse festival of Yule, with its blazing tar-barrels and its companies of straw-clad Guizers, its Yule bread, its lighted candles, and all its quaint and antique rites, into the modern Christmas with its preaching and singing of hymns.' In short, he is in a transition period, and with the shame-facedness that belongs to it, though he no longer believes in witches, in charms and incantations, lucky and unlucky days, he has still a lingering reverence for all these things, and has in consequence a sort of uncomfortable feeling that those who laugh at all the lore that his forefathers believed, and all the customs that they observed, are scoffing at really sacred things. The language is soft and almost lisping, *th* being always sounded as *d*; the second person singular is used in address; and though the old Norse tongue—which lingered here lovingly in Foula and Unst down to the beginning of the 19th century—is not now even understood, the dialect is so full of Norse words that it sounds to strangers as if it were a foreign tongue. The place names belong to the same language, and though there are many Scotch family names to be found, by far the greater number of these too are of Norse origin.

The only town is Lerwick, and the only village of any size, Scalloway, but there are a large number of hamlets for which reference may be made to the parishes,

The principal mansions are Belmont House, Brough Lodge, Bunness House, Busta House, Gardie House, Garth House, Lunna House, Melby House, Reawick House, Sandlodge, Sumburgh House, and Symbister House. The islands are divided into the twelve entire *quoad civilia* parishes of Unst—which includes Balta, Huney, Haaf Gruney, Uyea, Sound Gruney, and a number of smaller islets and skerries; Fetlar—which includes Linga, Fetlar, Urie Lingey, Daacy, and some smaller skerries; Yell—which includes Yell, Hascoy, Orfassy, Bigga, and Uynarey; Northmaven—which includes all the NW part of Mainland with Uyea, Gruney, Muckle Holm, Lamba, and some smaller islets; Delting—which includes on the E the islands of Brother, Little Roe, Samphrey, Fish Holm, Linga, and Wether Holm, and on the W, Muckle Roe and Linga; Walls, S of St Magnus Bay—which includes Papa Stour, Holm of Melby, Vaila, Linga, and Foula; Sandsting, SE of St Magnus Bay—which includes Vementry, Papa Little, West Isle of Burrasfirth (all in St Magnus Bay), and Stonda Stour in The Deepes and the skerries to the N of it; Nesting—which includes Lunna Holm, Whalsey and all the islands round about including the Out Skerry group, and all the coast islets S to South Isle of Gletness; Tingwall—which includes Greena, Flotta, Hoy, North Havra, Hildasay, Linga, Langa, Cheynies, Oxna, Green Holm, and Trondra; Lerwick—which includes Burra; Bressay—which includes the Isle of Noss and all the islets round about, and the islands of Papa, South Havra, and Little Havra; and Dunrossness—which includes Mousa, Muckle Bard, Lady's Holm, Horse Island, and Fair Isle. The *quoad sacra* parishes of North Yell, South Yell, Whalsey and Skerries (Nesting), Quarff (Lerwick), and Sandwick (Dunrossness) are also included.

There are Established churches within all the parishes and *quoad sacra* parishes, and there are also mission stations at Ollaberry (Northmaven), Olnafirth (Delting), Lunna (Nesting), Sandness, Papa Stour, and Foula (Walls), Whiteness (Tingwall), Fair Isle (Dunrossness), Cunningsburgh (Sandwick), West Sandwick (Mid Yell), and Balta Sound (Unst). There are 10 places of worship in connection with the Free Church, and 8 mission stations; 4 in connection with the United Presbyterian Church, and 3 stations; 7 in connection with the Congregational Church; 5 in connection with the Wesleyan Methodist Church, and 6 missions; 2 in connection with the Baptist Church; and 2 in connection with the Episcopal Church. In the year ending September 1893 there were in Shetland 48 schools, of which 45 were public. Shetland, with a constituency of 3285 in 1893-94, unites with Orkney in returning a member to serve in parliament. The islands have the same lord-lieutenant and vice-lieutenant as Orkney, but they have 9 deputy-lieutenants and 46 justices of peace of their own. They form a division of the sheriffdom of Caithness, Orkney, and Shetland, but have a separate sheriff-substitute resident at Lerwick. Ordinary sheriff courts are held at Lerwick every Wednesday during session; a sheriff small debt court, formerly held at Burravoe, is now discontinued. Justice of peace, ordinary, and small debt courts are held at Lerwick as occasion requires. The County Council is composed of 27 members—one each for as many electoral divisions. These are divided into two districts—the North Isles District, with 5 representatives; and the Mainland District, with 22. The two district committees are composed partly of county councillors and partly of parochial board representatives. The Council is otherwise divided into the following committees:—The County Road Board (comprising all the councillors), the Standing Joint Committee of the Council (including also several of the Commissioners of Supply), the County Valuation Committee, the District Lunacy Board, the Visiting Committee of Lerwick Prison, the Parliamentary Bills Committee, the Executive Committee under Contagious Diseases (Animals) Acts, the Finance Committee, and the General Purposes Committee. The average number of registered poor in 1892 was 934 with 194 dependants. There is a combination poorhouse at Lerwick, with accommo-

dation for 50 inmates. The average of pauper lunatics is high, being about 40 per 10,000, while the ratio for the whole of Scotland is 26. The proportion of illegitimate births averages about 4·5 per cent., and the death-rate about 18 per 1000. Valuation (1674) £2288, (1843) £19,929, (1874) £33,176, (1884) £44,098, (1885) £45,730, (1893) £43,214. The civil and registration counties are identical. Pop. (1801) 22,379, (1811) 22,915, (1821) 26,145, (1831) 29,392, (1841) 30,558, (1851) 31,078, (1861) 31,670, (1871) 31,608, (1881) 29,705, (1891) 28,711, of whom 12,190 were males and 16,521 females. The great discrepancy of the sexes is caused by many of the men having been away at distant fishings at the period when the census was taken. In 1891 the number of persons to each square mile was 52, the number of families 6304, the number of houses 5564, and the number of rooms 14,138. Of the 28,711 inhabitants, 358 males and 169 females were connected with the civil or military services, or with professions; 27 men and 676 women were domestic servants; 676 men and 5 women were connected with commerce; 4803 men and 606 women were connected with agriculture and fishing; and 1602 men and 5318 women were engaged in industrial handicrafts, or were dealers in manufactured substances. Of those connected with farming and fishing 1984 men and 606 women were concerned with farming alone, and 1593 farmers employed 114 men, 106 boys, 188 women, and 56 girls.

Ecclesiastically the whole of Shetland is embraced in the Synod of Shetland, which contains the presbyteries of Lerwick, Burravoe, and Olafnir. It meets at Lerwick on the last Wednesday of April. The presbyteries are separately noticed. The Free Church has also a synod of Shetland, containing, however, only one presbytery of the same name, and including charges at Cunningsburgh, Delting, Dunrossness, Fetlar, Lerwick, Hillside (Unst), Uyea Sound (Unst), Walls, Weisdale, and North Yell. The U.P. Church has a presbytery of Shetland, with churches at Burra Isle, Lerwick, Mossbank, and Ollaberry.

History.—The name is derived from the Scandinavian Hjalmland—or 'high-land'—whence Hjalatland, Zetland, and Shetland. The history is so largely identified and intermixed with that of Orkney, that the outline given in dealing with that group is in great measure applicable to both. In 1195 the lordship of Shetland became separated from that of Orkney in consequence of the rebellion of Jarl Harald against Sverrir, King of Norway, and the two were not again united till the grant by King Hakon to Henry St Clair in 1379. During the interval the islands are in the happy condition of having no history except what may be connected with the forays of the Vikings that frequented their bays and sounds; and yet it was during this period that the Norseman, with all his ways, took firm root here, and laid the foundation of all the peculiarities of the Shetlander of the present day. Gifford, who wrote in 1733, draws indeed a melancholy picture of the state of the islands during this period under the direct rule of the Kings of Norway, but whence he procured his materials is very doubtful. If any really exist they must be in the archives at Bergen. 'The poor udallers,' he says, 'were miserably oppressed by the governor or Foud and kept under, being forbidden all sort of commerce with foreigners, as the subjects of that king are to this day in Faro and Island: so there was no such thing as money amongst them; and what they had of the country product more than paid the corn rent, they were obliged to bring to the governor, who gave them for it such necessities as they could not be without, and at what prices he had a mind, wherewith they were obliged to rest content, having no way to be redressed. Kept under this slavery they were miserably poor, careless, and indolent, and most of their young men, when grown up, finding the poor living their native country was likely to afford them, went abroad, and served in foreign countries for their bread, and seldom or never returned: so that these Islands were but thinly inhabited.' After the islands passed under the sway of

the Scottish kings the government was still more oppressive, as Crown donatory after Crown donatory, 'looking on them as a milch cow to be squeezed for their own especial benefit,' laid heavier and heavier imposts on the long suffering people, and it is to this time that the old hatred of Scotland and the 'ferry-loupin' Scots is to be traced. The history during this whole period and down to 1766, when Shetland was sold by the Earl of Morton to the ancestor of the Marquis of Zetland, is simply one long tale of oppression (see SCALLOWAY). During the 18th century the government was based on a series of 'Country Acts' applicable to this stewartry, and passed with consent of the heritors and kirk-session. They are excellent specimens of good old grandmotherly legislation, providing among other things that all persons should punctually attend the diets of catechising; that no person should 'fite' with or provoke his neighbour; that no servant should disobey his or her master's or mistress's lawful commands, or use provoking and unbecoming language towards them; that no one should keep more servants than they had absolute need for; that none should marry who had not £40 Scots of free gear to set up house on, or a lawful trade whereby to subsist, and so on, all the enactments being enforceable by fine or 'personal punishment'; and besides this, the Rancelmen had the power of inquiry into all domestic relations, as well as the highly important duty of finding out all witches and persons using charms. In 1817 the eminent French savant, M. Biot, carried on experiments with the pendulum at BUNESS, and was much struck by the simplicity of life and freedom from excitement enjoyed in this northern land. 'During the twenty-five years,' he says, 'in which Europe was devouring herself, the sound of a drum had not been heard in Unst, scarcely in Lerwick; during twenty-five years the door of the house I inhabited had remained open day and night. In all this interval of time neither conscription nor press-gang had troubled or afflicted the poor but tranquil inhabitants of this little isle. The numerous reefs which surround it, and which render it accessible only at favourable seasons, serve them for defence against privateers in time of war; and what is it that privateers would come to seek for? If there were only trees and sun, no residence could be more pleasant; but if there were trees and sun everybody would wish to go thither, and peace would exist no longer.' In 1818 Captain Kater conducted similar experiments in the same place. The title of Earl of Zetland in the peerage of the United Kingdom was granted in 1838 to Baron Dundas of Aske. The present—the third—earl, born in 1844, succeeded his uncle in 1873, and was in 1892 created Marquis of Zetland and Earl of Ronaldshay in the peerage of the United Kingdom, but his estates in Shetland are not of very large size. His Scottish seats are at Kerse House, Stirlingshire, and Dunbog, Fifeshire. The antiquities of the Shetland Islands are numerous and interesting, and the brochs or burghs, cairns, castles, and old churches will be found noticed either under the islands or parishes in which they are. Some of the more important are treated separately.

See also Brand's *Brief Description of Orkney, Zetland, etc.* (1683; reprinted 1701; and again, Edinb. 1883); *A Voyage to Shetland* (1751); *A True and Exact Description of the Island of Shetland* (Lond. 1753); *An Account of the New Method of Fishing practised on the Coasts of Shetland* (Edinb. 1775); *Neill's Tour through some of the Islands of Orkney and Shetland* (Edinb. 1806); *Arthur Edmondston's View of the Ancient and Present State of the Zetland Islands* (Edinb. 1809); *Peterkin's Notes on Orkney and Zetland* (Edinb. 1822); *Hibbert's Description of the Shetland Isles* (Edinb. 1822; reprint, Lerwick, 1892); *Sibbald's Description of the Islands of Orkney and Zetland, by Robert Monteith of Egilsea and Gairsay in 1633* (Edinb. 1845); *Balfour's Oppressions of the Sixteenth Century in the Islands of Orkney and Zetland* (Bannatyne Club, Edinb. 1859); two papers on 'Shetland and the Shetlanders' by Dr John Ker in *Good Words* for 1866; Thos. Edmondston's

Shetland Glossary (Edinb. 1866); Reid's *Art Rambles in Shetland* (Edinb. 1869); Saxby's *Birds of Shetland* (Edinb. 1874); *Shetland Fireside Tales* (Edinb. 1877); Cowie's *Shetland* (Aberdeen, 1879; 3d ed., 1880); Gifford's *Historical Description of the Zetland Islands in the year 1783* (Edinb. 1879); Low's *Tour through the Islands of Orkney and Shetland in 1774* (Kirkwall, 1879); articles by Karl Blind on the Folklore of the Islands in the *Nineteenth Century*, *Contemporary*, and *Gentleman's Magazine* for March 1882; papers by Dr M. F. Heddle in the *Magazine of the Mineralogical Society*, and by Messrs Peach and Horne in the *Journal of the Geological Society* for 1879 and 1880, and in the *Proceedings of the Royal Society of Edinburgh* for 1878-80; Tudor's *Orkneys and Shetland* (Lond. 1883); Rampini's *Shetland and the Shetlanders* (Kirkwall, 1884), Rev. J. Russell's *Three Years in Shetland* (Paisley, 1887).

Shettleston, a parish containing a small town of the same name, in the Lower Ward of Lanarkshire, immediately to the E of Glasgow. It is bounded N and NE by the parish of Cadder, E by Cadder and Old Monkland, S by Rutherglen, W by Calton and Barony, and NW by Springburn. Except on the S, where the line follows the centre of the Clyde for about 2 miles downward from the E side of the grounds of Easterhill House, the boundary is almost entirely artificial. The greatest length of the parish, from the E end of Bishop Loch west-south-westward to the western limit of the parish in the eastern suburbs of Glasgow, is $4\frac{1}{2}$ miles; the greatest width, from the S corner of the policies of Easterhill House northward, is $3\frac{1}{2}$ miles; and the area is 5174·674 acres, of which 123·710 are water. The surface is undulating, and the height above sea-level rises from 70 feet in the E to over 300 at a number of places to the N and E, the highest point, N of Barlanark House, being 337 feet. The soil is mostly a good sound loam, and the underlying rocks belong to the Coal-measures forming part of the rich mineral field of Lanarkshire. The greater part of Frankfield Loch ($2\frac{1}{2} \times 2$ furl.) lies within the parish on the N, and the whole of Hogganfield Loch (3×2 furl.) on the NW. The chief mansions are Barlanark House, Cardowan House, Carntyne House, Craighead House, Easterhill House, Frankfield House, Gartcraig House, Garthamlock House, Greenfield House, Haghill House, Tollcross House, and West-thorn House. The chief prison for the county of Lanark is at Barlinnie, in the NW of the parish. Shettleston is traversed by two of the main roads between Edinburgh and Glasgow, while the road from Glasgow to Stirling by Cumbernauld and Denny passes along the north-western border. It also includes a portion of the sections of the North British railway system which pass from Glasgow to Edinburgh, *viâ* Bathgate, and from Glasgow to Bothwell; and a reach of the Monkland Canal. There are stations at Parkhead, Carntyne, and where the two railway lines branch off at the town of Shettleston. Besides the post-town of the same name the parish contains also part of the eastern suburbs of Glasgow, the greater part of the conjoint villages of Millerston and Hogganfield, almost the whole of Tollcross, and a few small hamlets. The town of Shettleston, which includes the suburbs of Eastmuir and Sandyhills, has a station 3 miles E by S of Glasgow, and is inhabited chiefly by colliers and agricultural labourers. A number of villas, modern cottages, and tenement houses have lately been erected. A water supply was introduced from the Glasgow mains in 1869. There is a post office with money order, savings bank, and telegraph departments under Glasgow, a parish church, two Free churches, a Roman Catholic church, and two public schools. Eastmuir school, a two-storeyed erection of 1893, is of red stone from Ballochmyle, and has been built to eventually accommodate 1000 scholars at a cost of about £9000. Pop. of town (1861) 1947, (1871) 2418, (1881) 3608, (1891) 5430, of whom 2692 were males and 2738 females. Houses (1891) inhabited 1120, uninhabited 36, and being built 15. The other villages are separately noticed.

The parish, which was originally a part of Barony 346

parish, from which it was civilly disjoined in 1847, is in the presbytery of Glasgow and synod of Glasgow and Ayr. The mission church at Carntyne is connected with the parish, and besides the churches already mentioned, there are Free churches at Carntyne and Tollcross, and a U.P. church at Tollcross. There is a large and well laid-out cemetery at Sandymount. Under the School Board the Eastmuir, Garthamlock, Shettleston, Tollcross, and Millerston (combination) schools, with accommodation for 326, 125, 666, 498, and 250 pupils respectively, had, in 1893, attendances of 335, 33, 525, 461, and 124, and grants of £345, 10s. 6d., £25, 4s., £566, 10s., £489, 6s. 6d., and £133, 18s. 6d. In the same year the Roman Catholic schools at Cardowan and Eastmuir, with accommodation for 219 and 161 pupils respectively, had attendances of 117 and 210, and grants of £102, 18s. 11d. and £194, 11s. 8d. Pop. (1851) 6564, (1861) 6914, (1871) 7517, (1881) 9238, (1891) 10,503, of whom 5129 were males and 5374 females. Houses (1891) inhabited 2038, uninhabited 92, and being built 20.—*Ord. Sur.*, sh. 31, 1867.

Sheuchan. See STRANRAER.

Shevock, The, a rivulet of Aberdeenshire, dividing Insh and Culsalmond on the N from Kennethmont, Premnay, and Oyne on the S, and falling into the Ury at Old Rayne.

Shewalton House, a plain two-storey mansion of 1806 in Dundonald parish, Ayrshire, near the left bank of the Irvine, 1 mile WNW of Drybridge station. The Wallace owned the estate from at least 1473 till 1715, when it was sold to William Boyle, a brother of the first Earl of Glasgow. His descendant, David Boyle, succeeded in 1874, but it is now the property of Mr Kenneth.—*Ord. Sur.*, sh. 22, 1865.

Shian, a hamlet in the Glenquich section of Dull parish, Perthshire, near the left bank of the Quaiach, 15 miles WSW of Dunkeld.

Shiant Isles, a group of islets of basaltic character and picturesque appearance in the Outer Hebrides, lying in the Minch, $4\frac{1}{2}$ miles SE of the nearest point of the coast of Lewis, and 21 S of Stornoway, and formerly believed by the inhabitants of the Long Island to be a resort for fairies, elves, and other supernatural beings. They comprise a number of rocks or skerries, and the three islets of Garv-Ellan, Ellan-na-Kelly, and Ellan-Wirrey, all three of which are noticed separately. They all present a verdant surface, the hollows and declivities abounding in rich pasture; and they form a single sheep-farm, superintended by a single family, who reside on Ellan-na-Kelly. This islet seems anciently to have been the seat of a monastery or a hermitage, and it still possesses some ruins which look to have been ecclesiastical. Its name means 'the island of the cell;' and probably its reputed sanctity gave rise to the Gaelic designation of the group as *Eileanan Seunta* or 'sacred islands.' The Shiant Isles are strikingly characterised by columnar masses similar to those of Staffa and the Giant's Causeway; and had they lain in a position more accessible to tourists or less remote from the tracks of steamboat navigation, they could scarcely have failed to acquire a fame as great as that of Staffa. Pop. (1871) 5, (1881) 6, (1891) 8.—*Ord. Sur.*, sh. 99, 1858.

Shieldaig, a fishing village on the W coast of Ross and Cromarty, on the E side of Loch Shieldaig, 6 miles NNW of Lochcarron, under which it has a post and money order office. Most of the villagers are employed in the herring fishery. Its church is a parliamentary one, built in 1827, and containing 300 sittings. Stipend, £120. A Free church was built in 1876. Loch Shieldaig is a southward offshoot of the middle division of Loch Torridon; and measures 3 miles in length, by $2\frac{1}{2}$ miles across the entrance. In its bosom lies Shieldaig island, 50 feet high. A stupendous cliff of shelving precipices, tier above tier, rises immediately behind the village to a height of 1691 feet, and completely screens the inner part of the neighbouring marine waters.—*Ord. Sur.*, sh. 81, 1882.

Shieldhall, an estate in Govan parish, Lanarkshire, on the south side of the Clyde, 2 miles from the town

of Renfrew and 4 from Glasgow. It was sold in 1872 for £112,000. Here is the foreign animals wharf of the Glasgow corporation, while a little to the east are Linthouse ferry and a landing stage of the *Clutha* harbour steamers. Immense cattle sheds and slaughter houses have been fitted up at the wharf, while the accommodation and facilities afforded for the cattle trade are among the best in the kingdom. Sales are held immediately after the arrival of the cattle. At Shieldhill also are the extensive works of the Scottish Wholesale Co-operative Society (Ltd.) Started in 1888 with shoemaking, trade after trade has been added till the works now cover a large extent of ground. The trades carried on, besides shoemaking, include brushmaking, cabinetmaking, confectionery and preserve making, engineering, leather manufacture, printing, shirtmaking, tailoring, and tobacco manufacturing. The society has also extensive stores and warehouses in Glasgow, and own the Chancelot Flour Mills, Edinburgh. At Linthouse Shipbuilding Yard a few years ago occurred the accident to the *Daphne*, which capsized while being launched, and a large number of men who were still at work within the vessel were drowned. In the neighbourhood stands Govan Combination Poorhouse.

Shieldhill, an ancient mansion in LIBBERTON parish, Lanarkshire, 4 miles NW of Biggar. Alterations were made on it in 1820, but it still comprises a massive square keep, whose second storey, now the dining-room, was the family chapel in pre-Reformation days. Held by his ancestors from at least 1432, the estate now belongs to John George Chancellor, Esq. (b. 1821; suc. 1841).—*Ord. Sur.*, sh. 24, 1864.

Shiel, Glen. See GLENSHIEL.

Shielhill, a seat of the Lyell family in Kirriemuir parish, Forfarshire, near the right bank of the South Esk, $3\frac{1}{2}$ miles NE of the town.

Shiel, Loch, a lake on the boundary between the district of Moidart in Inverness-shire and the districts of Sutherland and Ardgour in Argyllshire. Commencing at the foot of Glenfinnan, it extends $11\frac{1}{2}$ miles south-westward and 6 west-by-southward, is nowhere more than 1 mile broad, and from its foot sends off the river Shiel 3 miles north-westward to salt-water Loch Moidart. The mountains which flank it have a maximum height of 2915 feet, and go off in diverging chains. They present a remarkable variety of outline and most magnificent groupings of their masses. The fishing is excellent, salmon, grilse, sea-trout, and brown trout being both fine and numerous. In Glenmoidart House is the old canoe (an oak trunk hollowed out by axe and fire) in which Prince Charles Edward was towed by his followers across Loch Shiel. They sank it near St Finnan's Isle, and there it lay till 1855. On 15 Sept. 1873 the Queen drove from Inverlochty to 'Loch Shiel, a fresh-water loch, with fine very high rugged hills on either side.

... As we suddenly came upon Loch Shiel from the narrow glen, lit up by bright sunshine, with the fine long loch and the rugged mountains, which are about 3000 feet high, rising all around, no habitation or building to be seen except the house of Glenaladale, which used to be an inn, and a large picturesque Catholic church, reminding one, from its elevated position to the right and above the house, of churches and convents abroad, I thought I never saw a lovelier or more romantic spot, or one which told its history so well. What a scene it must have been in 1745! And here was I, the descendant of the Stuarts and of the very king whom Prince Charles sought to overthrow, sitting and walking about quite privately and peaceably' (*More Leaves from the Journal of a Life in the Highlands*, 1884).

Shiels. See BELHELVIE.

Shiness Farm. See LAIRG.

Shin, Loch, a lake in Lairg parish, Sutherland. Lying 270 feet above sea-level, it extends $16\frac{1}{2}$ miles south-eastward to Lairg village, and varies in breadth between $\frac{1}{2}$ and $1\frac{1}{2}$ mile. The trout are fine, and salmo-ferox are numerous. Loch Shin possesses strictly a Highland character, but wants the magnificence of mountain-flank, the wealth of forest, and the adornment of park

and islet, which distinguish many of the Highland lochs. Its south-eastern extremity, indeed, is overhung by a fine sweep of wood, and washes a slope beautifully studded with the neat cottages, the humble church, and the peaceful manse of the village of Lairg; and its W end is so sublimely encircled by the stupendous mountain-masses which are grouped with Benmore-Assynt as to need only wood and a little culture to produce a picturesque blending of grandeur and beauty; but its middle and greatly chief extent was described by Dr Macculloch as 'little better than a huge ditch without bays, without promontories, without rocks, without trees, without houses, without cultivation, as if Nature and man had equally despised and forgotten it.' Hugh Miller spent three autumn holidays at his aunt's cottage in the ancient Barony of Gruids on the shore of Loch Shin; and chapters v. and vi. of *My Schools and Schoolmasters* are largely devoted to those happy days of his boyhood.—*Ord. Sur.*, shs. 108, 102, 1880-81.

Shin, The, a short but picturesque salmon river of Sutherland, issuing from the SE end of Loch Shin, in the parish of Lairg, and running $7\frac{1}{2}$ miles southward to the Oikell at Invershin in the parish of Creich, $8\frac{1}{2}$ miles NNW of Bonar-Bridge. The vale which it traverses derives from it the name of Strathshin; and, though narrow, is cultivated, wooded, and rich in the features of close landscape. At the river's exit from the lake, and on its E bank, are the village of Lairg, with a hotel and a pier. Two miles from the river's confluence with the Oikell is the Linn of Shin—a waterfall whose picturesqueness has been marred by blasting, but which is quite remarkable for its height as a salmon-leap.—*Ord. Sur.*, sh. 102, 1881.

Shinnel Water, a troutful rivulet of Tynron parish, Nithsdale, Dumfriesshire, rising at an altitude of 1500 feet in the north-western extremity of the parish, and flowing $10\frac{1}{2}$ miles east-south-eastward through the interior, then 2 miles north-north-eastward along the Keir boundary, till, after a total descent of 1275 feet, it falls into Scar Water, $\frac{1}{2}$ mile WSW of Penpont. Just at the point of its influx to the Scar, it rushes with great impetuosity over a remarkable ridge of bold rocks; and between 2 and 3 miles above this point, or a little below Tynron manse, it makes a considerable waterfall called Aird Linn, which, owing to its being richly fringed and shaded with wood, is highly picturesque.—*Ord. Sur.*, shs. 15, 9, 1864-63.

Shira. See GLENSHIRA.

Shirmers Tower. See BALMACLELLAN.

Shiskine, a hamlet in Kilmory parish, Arran, $10\frac{1}{2}$ miles WSW of Brodick. It has a post office, with money order, savings bank, and telegraph departments, an Established church, a Free church, and a public school.

Shochie Burn. See MONEYDIE.

Shona, an island ($3 \times 1\frac{1}{2}$ miles) of Ardnarmurchan parish, Moidart district, Inverness-shire. It lies in Loch Moidart, extending in length athwart about two-thirds of that loch, and dividing it into two channels. Pop. (1861) 96, (1871) 102, (1881) 118, (1891) 104.

Shotts (originally *Bertramshotts*), a parish on the E border of the Middle Ward of Lanarkshire. It is bounded NW and N by the parish of New Monkland and by Linlithgowshire, NE and E by Linlithgowshire, SE and S by the parish of Cambusnethan, for $\frac{1}{2}$ mile at the SW corner by the parish of Dalziel, and W by the parish of Bothwell. The boundary is largely natural. On the NW and N the line follows North Calder Water from the mouth of Shotts Burn upwards to Hillend Reservoir, passes through the centre of the reservoir, and follows the feeding stream at the E end for 3 furlongs to the county boundary. It then passes south-eastward along the county line, till $\frac{1}{2}$ mile NE of Bauds, both reach Barbauchlaw Burn, the course of which is followed downward to a point 3 furlongs E of Barracks, whence it passes first E and then S till it reaches How Burn $\frac{1}{2}$ mile W of Balgornie. It follows this Burn upwards for $\frac{1}{2}$ mile, and then strikes S by E across the Polkemmet and Fauldhouse Moors to $2\frac{1}{2}$ miles S by E

of Harthill, where, quitting the line of the county boundary, it passes W by S to the source of South Calder Water, which stream it follows all the way down to the junction of Tealing or Tilton Burn. Turning up this it follows it to a point 1 furlong N of Brownhill, whence it runs irregularly first north-westward and then north-eastward till, $\frac{1}{2}$ mile E of Fairbank, it reaches Shotts Burn, which it follows to its junction with North Calder Water. The greatest length of the parish, from the point on South Calder Water where the parishes of Shotts, Cambusnethan, and Dalziel meet, north-eastward to beyond Southrig, is 10 $\frac{1}{2}$ miles; the greatest breadth, from South Calder Water at Shotts Ironworks, north-westward to North Calder Water, is 6 $\frac{1}{2}$ miles; and the area is 25,336 acres, of which 392 are water. The height above sea-level varies from 341 feet at the mouth of Shotts Burn on the W, to about 1000 feet along the central ridge of high land which forms part of the watershed between the basins of the Forth and Clyde. By far the greater portion of the surface consists of undulating ridges from 700 to 900 feet high, from many points along which excellent views are to be obtained. Of the land area about 15,000 acres are arable, 3000 moss, 1800 woodland, and the rest is occupied by buildings, roads, and rough pasture. The drainage is carried off, in the SE, by the upper waters of the river Almond, which has its source within the parish, by the streams already mentioned in describing the boundary line, and by smaller streams flowing to them, of which the chief is Forrestburn Water, which traverses a great part of the length of the parish on its way to join Barbauchlaw Burn. Hillend Reservoir ($1\frac{1}{2} \times \frac{3}{4}$ mile) on the northern border, formed for supplying the Forth and Clyde Canal, has an area of almost 300 acres, of which, however, only 172 acres are in Shotts, the rest being in New Monkland. Lily Loch (4×2 furl.), a little to the SW, receives its name from having formerly contained a large number of water-lilies, but these were destroyed in 1836 when the canal company converted the loch into a compensation reservoir and raised the level of the water. The area is about 49 acres. Roughrig Reservoir (6×2 furl.), $1\frac{1}{2}$ mile SSW of this and covering an area of 120 acres, was formed in 1848 in connection with the water supply of Airdrie and Coatbridge. The soil varies very much, but, considering the elevation, produces fair returns, so that in average seasons good crops of oats, hay, potatoes, and turnips may be seen, even at an elevation of nearly 900 feet above sea-level. In the northern part of the parish the underlying rocks are intrusive dolerites, but elsewhere they belong to the Coal-measures, and are rich in bands of coal, ironstone, sandstone, and fireclay, all the beds of economic value having been long extensively and vigorously worked. Coal seems to have been mined to considerable extent from at least the middle of the 18th century, and the development of the ironstone dates from 1787, when the Omoa Ironworks, near the extreme SW of the parish, were established by Colonel William Dalrymple, who, having distinguished himself at the capture of Omoa in the West Indies, bestowed that name on his new establishment. The works changed hands several times, and were finally abandoned in 1866. Shotts Ironworks on the SE, established in 1802 by a private company, for which John Baird was long managing partner, carry on extensive smelting operations. The company was reconstituted in 1824, and became a limited liability company in 1874. Ironstone and coal pits are scattered all over the southern portion of the parish, from Benhar on the E to Gartness on the W; and the other industries are a paper-mill at Caldercruix; tile, fireclay, and composition-brick works, and quarries, while the Caldervale print-works, Moffat paper-mill, and Gartness Ironworks are quite close to though beyond the western border, as are also the extensive collieries about Cleland and the Omoa Fireclay Works.

The church of Bertramshotts is mentioned in a Bull of Pope Sixtus IV. in 1476, and the name was afterwards applied to the whole parish, but the first part of the name dropped off during the following century.

The modern name—the latter part—seems to be from the Saxon *Shot*, a plot or division of ground, but who or whence the Bertram must remain doubtful. According to Hamilton of Wishaw, he was ‘a great robber that infested all that part of the country [in the time of Robert II.] by violent outrages and depredations, which he carried to a very insufferable degree; so that, at length, the Government were obliged to take notice of him, and by a public Act notified, “that whosoever should apprehend, kill him, or bring him to justice, should be rewarded with such and such lands.” His name, tradition tells us, was Bartram de Shotts. The Laird of Muirhead at that time was a bold, daring, intrepid man; he did not surprise him in his lurking places, but with a few of his company whose courage he could well trust, came up, and in the daytime attacked him in that valley to the east side of the Kirk of Shotts, when, after a pretty smart encounter, the Goliath, Bartram, was slain on the place. The Laird of Muirhead cut the head off this robber, which he carried straight to the king, who immediately, in terms of the proclamation, ordered him a charter and infestment of these lands, that were then, or soon after, called Lachop [see LAUCHOPE].’ There is also an allusion to the incident in the fragment called ‘The Laird of Muirhead,’ published in the *Minstrelsy of the Scottish Border*—

‘Afore the King in order stude
The stout Laird of Muirhead,
Wi’ that sam’ twa-hand muckle sword
That Bartram fell’d stark dead.’

The local tradition as now preserved differs from Hamilton as to the manner of the giant’s death, which is stated to have been brought about by Muirhead alone, who, concealing himself among some heather near a well where the robber was in the habit of quenching his thirst, rushed out as Bartram lay on his face drinking, and rendered him powerless by cutting his hand-strings. There is no charter evidence as to when or how Lauchope came into possession of the Muirheads, as the older family papers seem to have been lost when Lauchope House was burned in 1570, because the owner had given shelter to Hamilton of Bothwellhaugh as he fled from Linlithgow after the assassination of the Earl of Murray. The ‘stout’ laird of Muirhead of the ballad was John Muirhead of Lauchope and Bullis, who was killed at Flodden. The family is now represented by the Grosset-Muirheads of BREDISHOLM. As the parish is traversed near the centre by the southern of the old main lines of road from Edinburgh to Glasgow, it was during the troublous period of Scottish history visited by several of the armies that then marched and countermarched through the land. The great Roman road from the S divided at Belstane in Carlisle, and one branch passing through Cambusnethan crossed the South Calder Water near Allanton House, and passed through Shotts by Penty, Kirkgateknowes, Hareshaw, Moor, Salsburgh, Duntillan Hill, Mountcow, and Braco, and thence to Castlecary. Stuart in his *Caledonia Romana* mentions that on Braco farm there were faint traces ‘of what seems to have been an oblong enclosure, with rounded angles, about 300 feet long, by from 150 to 200 broad,’ but he says the marks of it were even in his time exceedingly indistinct, and they have now altogether vanished. Traces of an old line of road are visible at several points along the route given, and near Braco and at Duntillan Hill remains of a regularly constructed way roughly causewayed with whinstone boulders have been found. In 1845 a hoard of valuable Greek coins was found on Braco farm, and in 1856 one of Roman coins. In the beginning of the 19th century a large number of 16th century coins were found at the base of Middle Braco Craigs.

Originally in the barony of Bothwell, Shotts was separated therefrom in 1457 and formed into a distinct lordship with the name of Bothwell Moor, which was granted to the Hamiltons, in which family the superiority still remains. In consequence of this connection the inhabitants suffered severely during the

reprisals that took place after the murder of the Earl of Murray. In 1630 Shotts was the scene of a great 'revival,' which resulted mainly from a wonderful sermon preached by the Rev. John Livingstone, who was then living with the Earl of Wigtown at Cumbernauld, but there must have been a sad falling away afterwards, for in 1643-44 the session had to deal with a number of witches, and in 1683, according to Law in his *Memorials*, 'thirty men met betwixt the Kirk of Shotts and Cambusnethan who had beforehand forsaken the ordinances of God, and there did debate the authority of the Scriptures, and thereafter played at the football with them, and after that burned them; this was verified by two Ministers, Mr William Violent and Mr John Oliphant, who had certain information of it.' In October 1650 Cromwell was here, having marched from Glasgow with all his 'horses and fute, by the muir-way and Kirk of the Shotts, where they had much difficulty to carey their cannon and gunns;' and in July of 1651 his army encamped here for a night on the way from Linlithgow to Hamilton. The Shotts people were stout Covenanters, and many of them were concerned in the Pentland Rising as well as in the later affairs of Drumclog and Bothwell Bridge. The Duke of Monmouth's army, on its way to the last battle, encamped for ten days near Muirhead in the E end of the parish, and on their return march passed the same way, on both occasions making pretty free with the property of the inhabitants, as the Highland Host had done before them. The moss in the extreme SE of the parish between Benhar and Starryshaw was the chief scene of the district conventicles, and it was here that Cargill preached the Sunday after Richard Cameron's death from the text, 'Know ye not that there is a prince and a great man fallen this day in Israel?' A large boulder to the S of Benhar farmhouse is known as Peden's Stone, and to it is now attached an iron slab with the inscription, 'This stone, according to tradition, is one of the places where Peden and others preached to the Covenanters, of whom the world was not worthy. They wandered in deserts and mountains and in dens and caves of the earth.—Erected by a Committee from proceeds of sermons, 1866.' In the churchyard is an upright stone with the inscription, 'Here lies the bones of William Smith, who lived in Moremellen, who, with others, appeared in arms at Pentland Hills in defence of Scotland's Covenanted work of Reformation, anno 1666, agreeable to the Word of God, in opposition to Popery, Prelacy, and Perjury, and was murdered near this place.' His death seems to have taken place, however, in a private quarrel just after his return from Pentland. In subsequent historical events the parish had but little share, though in 1745 part of the Highland army passed through it during their retreat from England, and levied contributions from many of the inhabitants.

A church dedicated to the Virgin Mary and St Catherine of Sienna* existed at a 'desert place' called Bertramshotts in the middle of Bothwell Moor prior to 1450. It was a dependency of the Collegiate church of Bothwell, and the site was about the E end of the present churchyard. It was repaired and partly rebuilt in 1640-48, and again in 1691, but having become unsafe it was removed and the present church erected in 1819-21 at a cost of nearly £3000. The spire was struck by lightning and destroyed in 1876, but a new one was at once erected and other repairs executed. After the Reformation, Bothwell, Shotts, and Monkland were all attended to by the minister of Bothwell, and afterwards this grouping was altered to Shotts, Bothwell, Cambusnethan, and Dalziel, while from 1571 to 1591 the parish had a 'reader.' In 1588 the Synod of Glasgow ordered a minister to be appointed, and this was done in 1591. Distinguished natives have been John Miller (1735-1801), miscellaneous writer and professor of civil law in Glasgow University, whose father was minister of the parish; Dr Matthew Baillie (1761-1823), the famous London physician, whose

father was minister of the parish, his mother being a sister of the celebrated anatomist, Dr William Hunter; Dr Baillie's sister, the well-known Joanna Baillie, was born at Bothwell only nine days after her father's translation from Shotts to that parish; Janet Hamilton (1795-1873), the poetess; while Gavin Hamilton, the historical painter (1717 to 1776 or 1796), seems to have sprung from a Shotts family, but he was probably born in Edinburgh. Dr Cullen, the eminent Edinburgh physician, had his first practice at Shotts. The parish is traversed by one of the main roads from Edinburgh to Glasgow, which passes for 7 miles through the centre; another by Bathgate, Airdrie, and Coatbridge passes for 3½ miles just inside the northern border, and there are, except in the moorland, good district roads. The northern border of the parish is traversed by the Coatbridge and Bathgate section of the North British railway system, with stations at Westeraigs and Forrestfield, while others farther W, at Caldercruix and Clarkston, are close to the parish boundary. The first is 23½ miles W by S of Edinburgh, and the second 26½, and from Westeraigs a branch passes through the eastern part of the parish, quitting it at Shotts Ironworks on its way to join the Bathgate and Morningside section at Blackhall. The Edinburgh and Glasgow section of the Caledonian railway passes along the S side, and has stations at Shotts Ironworks, 25½ miles from Edinburgh and 16½ from Glasgow; Omoa, 30 from Edinburgh and 12 from Glasgow; and Cleland, 30 from Edinburgh and 12 from Glasgow, the last being on a branch line from Newarthill to Morningside. There are also several mineral loops and branches.

The village, including Kirk of Shotts and Shottsburn, is about 2½ miles NNW of Shotts station. It has a post office, with money order, savings bank, and telegraph departments, a hotel, and a branch office of the Commercial Bank. The Duke of Hamilton obtained in 1685 'full power, liberty, and privilege to hold two free fairs yearly at the Church of Shotts. The one upon the . . . day of June, the second upon the . . . day of August, with a weekly mercat at the said Church of Shotts;' and annual fairs are still held on the third Tuesday of June and the last Tuesday of November—both *o.s.*—the latter having probably superseded the August fair, which was given up early in the 19th century. It was a yarn fair where home-spun cloth and yarn were disposed of. The balance on which the material was weighed hung at the Tron Knowe to the E of the present school. The parish also includes the villages of Dykehead (SE), Harthill (E), Muirhead (SE), and Salsburgh (W), and the greater part of the villages of Cleland and Shotts Ironworks, all of which are separately noticed.

Shotts is in the presbytery of Hamilton and synod of Glasgow and Ayr. The church, which has been already noticed, contains 1200 sittings. The parish contains also the *quoad sacra* churches of Calderhead, Harthill and Benhar, and Cleland, and embraces part of the *quoad sacra* parish of Clarkston. The Free church, built in 1848 and rebuilt in 1873, is at Dykehead; and there are also Free churches at Harthill and Cleland. The United Original Secession church at Shottsburn originated in an Associate Congregation formed in 1738 in consequence of the forced settlement of Rev. David Orr in that year, and afterwards greatly strengthened by the forced settlement of Rev. Laurence Wells in 1768. The church was erected in 1771, but has since been repaired. There are also an E.U. church and a Roman Catholic chapel. Under the School Board Benhar Colliery, Cleland, Greenhill, Greens, Harthill, Northrigg, and Shotts public schools, with accommodation for 373, 389, 250, 63, 254, 107, and 232 pupils respectively, had in 1893 attendances of 236, 300, 102, 26, 259, 36, and 129, and grants of £239, 19s. 6d., £303, 2s., £104, 2s. 6d., £36, 17s. 6d., £250, 7s. 6d., £27, 18s., and £126, 14s. Cleland Roman Catholic school, with accommodation for 366, had at the same date an attendance of 276 and a grant of £274, 14s. 6d. The mansions are Murdoston and Easter Moffat. Pop. (1801) 2127, (1831)

* A well near the church is still called Kate's Well, and in the neighbourhood are Kate's Park and Kate's Brae.

3220, (1861) 7343, (1871) 8353, (1881) 11,214, (1891) 11,957, of whom 6546 were males and 5411 females, while 1721 were in the ecclesiastical parish. Houses (1891) inhabited 2130, uninhabited 175, and being built 21. See also Grossart's *Historic Notices of the Parish of Shotts* (Glasgow, 1880).—*Ord. Sur.*, shs. 31, 23, 1867-65.

Shotts Ironworks, a village on the border of Shotts and Cambusnethan parishes, Lanarkshire, near Shotts railway station, and $9\frac{1}{2}$ miles E of Holytown. It has pig-iron works with six furnaces. Pop. (1861) 1835, (1871) 1208, (1881) 969, (1891) 1141, of whom 643 were males and 498 females, while 938 were in the Shotts portion of the village.

Shuna, a Hebridean island in Kilbrandon and Kilchattan parish, Argyllshire, lying 1 mile SW of the entrance of Loch Melfort, and separated from the mainland on the E by a sound 1 to 2 miles broad, from the island of Luuing on the W by the Sound of Shuna, $\frac{1}{2}$ to $\frac{3}{4}$ mile broad. Its length, from N to S, is $2\frac{1}{2}$ miles; its greatest breadth is $1\frac{1}{2}$ mile; and its area is $1178\frac{1}{2}$ acres, of which $57\frac{1}{2}$ are foreshore. The surface is all rolling, tumulated, and broken ground, whose tiny summits nowhere rise higher than 200 feet above sea-level. It possesses much of that intricate mixture of land and rock which, with the aid of wood and culture, abounds in mild soft pictures of rural beauty; it derives picturesqueness from its encirclement with intricate bands of sea, overhanging by the lofty hard-featured heights of island and mainland; and it has everywhere such a profuse and curious interspersation of natural woods, with rocks and cultivated fields and pasture lands, as to look, from end to end, like a large sea-girt park. Though topographically grouped with the Slate Islands, it possesses little or none of the clay-slate so prevalent in Luuing, Seil, Easdale, Lunga, and Scarba; yet it presents interesting objects of study to a geologist, and at each end it has a bed of dark blue crystalline limestone, which has long been wrought for economical purposes. Shuna belongs to the City of Glasgow. Pop. (1861) 43, (1871) 15, (1881) 14, (1891) 11.

Shuna, an island of Lismore and Appin parish, Argyllshire, in Loch Linnhe, nearly opposite Portnacroish village, and 14 miles NNE of Oban. Measuring $10\frac{1}{2}$ by $5\frac{1}{2}$ furlongs, it rises to a height of 233 feet, and contains the ruins of CASTLE-SHUNA. Pop. (1871) 14, (1881) 8, (1891) 6.—*Ord. Sur.*, sh. 53, 1877.

Shurrery, Loch. See REAY.

Shurroch Hill. See KINGOLDRUM.

Sibbaldie. See APPLEGARTH.

Sidlaw Hills, a long chain of heights, extending from Kinnoull Hill, on the left bank of the Tay, in Perthshire, east-north-eastward and north-eastward to the German Ocean at Redhead in Forfarshire, and at Stonehaven in Kincardineshire. The chain is detached from the Ochil range only by the intervention of the Tay and the Earn; just as the latter range is detached from the Lennox Hills only by the intervention of the vale of the Forth; and jointly with these ranges it forms the Lowland screen, or the screen on the Lowland side, of what, without any great accommodation of language, may be called a continuous valley along the skirt of the Highland frontier, from the vale of the Leven in Dumbartonshire to the German Ocean at Stonehaven. To the more marked and emphatic, and to the popularly designated part of this great valley, or 'Strathmore,' belongs the screen of the Sidlaws. Yet the heights are not strictly a chain. They extend with considerable ridgy regularity from Kinnoull Hill, north-eastward to a point a little distance SE of the town of Forfar; they there fork into two lines, the one of which goes off in undulations and detachments, yet with very observable continuity nearly eastward to the sea at Redhead, while the other proceeds irregularly north-eastward, becomes almost lost in the vicinity of Brechin, and afterwards rallies and straggles on along the Lowland side of the Howe of Kincardine to the sea at Stonehaven. In the popular application of the name, however, the Sidlaws are only the part in Forfarshire from Lundie to Redhead. Many of the hills, such as the celebrated Dun-

sinane, are isolated in position, and have conical summits. Some, such as the hills of Dunnichen, Dunbarrow, and others, are rounded and detached, and overhang intervening valleys. In some instances, as in the ridge of the Tulloes, which runs along the southern frontier of the parishes of Inverarity, Dunnichen, and Kirken, the heights form a long flat regular range of moderate elevation. The highest point is Auchterhouse Hill (1899 feet); but this, or an altitude very little inferior, is attained by many other summits. Seen from Fifeshire, they appear a lofty brown mountain-barrier, drawn out like a huge rampart to cover the interior of Perthshire and Forfarshire. Some of them are cultivated to the summit, and many which, in the 18th century, were covered all over with stunted heath, now seem to groan beneath loads of green umbrageous timber. The prevailing formation of the Sidlaws is the Old Red Sandstone,—part of the vast bed which so curiously waves in several great and successive curvatures across Forfarshire. On the side facing Strathmore, the strata dip to the N at an angle of about 45° ; but they diminish in dip as the hills are crossed, till on the side facing the Lowlands, especially in the upper part of Carmyllie, they become nearly or altogether horizontal. The sandstone is of various colours, red, brown, grey, white, with a slight tinge of green; and it is, in some instances, susceptible of a remarkably smooth polish. The strata alternate with beds of shale, and occasionally with some beds of conglomerate which measure from 50 to 100 feet in thickness. Trap rocks, chiefly of greenstone, and to some extent of porphyry, occur plentifully in intersecting veins, and occasionally in surmounting nodules and masses. An impervious boulder-formation covers a large part of the surface.—*Ord. Sur.*, shs. 48, 57, 66, 67, 1868-71.

Sillyearn Hill. See GRANGE, Banffshire.

Silverbanks. See CAMBUSLANG.

Simprin. See SWINTON.

Sinclairston. See OCHILTREE.

Sinclairtown. See DYSSART and KIRKCALDY.

Skar Water. See SCAR WATER.

Skateraw. See INNERWICK.

Skateraw, a fishing-village in Fetteresso parish, Kincardineshire, close to Newtonhill station on the Stonehaven and Aberdeen section of the Caledonian railway, and 6 miles NNE of Stonehaven. Pop. (1871) 336, (1881) 375, (1891) 340.

Skavaig, Loch. See SCAVAIG, LOCH.

Skelbo Castle, the ancient seat of the Sutherlands, Lords Duffus, in Dornoch parish, Sutherland, on the southern shore of Loch Fleet, 5 miles N by W of the town.

Skelmorlie, a watering-place in Largs parish, Ayrshire, and a *quoad sacra* parish partly also in Innerkip parish, Renfrewshire. The village stands upon the Firth of Clyde to the S of the terminus of the WEMYSS BAY railway (1865), this being 8 miles SW of Upper Greenock and $30\frac{1}{2}$ W of Glasgow. Feued out since 1850, and mainly built of native red sandstone, it comprises two portions, Upper and Lower Skelmorlie, the former of which consists of workmen's houses, whilst the latter comprises several rows of villas and a beautiful crescent behind. A hydropathic establishment, in the Scottish Baronial style, was erected in 1868, and in 1875 received the addition of Turkish, salt-water, and other baths. It is perched on the edge of a rugged cliff of conglomerate sandstone and pebble, which rises to a sheer height of 100 feet above the shore-road; and it thus enjoys the most bracing air and commands a magnificent view. The *quoad sacra* parish, formed in 1860, is in the presbytery of Greenock and the synod of Glasgow and Ayr; the living is worth £455. Its church was rebuilt in 1894-95 at an estimated cost of £5000, and has accommodation for 580 persons and a hall to hold 250. The nave of the church has a central passage leading up to the chancel, whose south window, of three lights, has stained-glass representations of the Ascension, Baptism, and Passion of our Lord; an arcaded west window has also a trio of lights, filled in with figures of three representative saints. There are also a U.P. church (1874),

a post office under Greenock, with money order, savings bank, and telegraph departments, a gaswork, a golf club, a Workman's Rest, and a public school, with accommodation for 245 children. Pop. of village (1871) 404, (1881) 757, (1891) 951; of *g. s.* parish (1871) 886, (1881) 1264, (1891) 1380, of whom 301 were in Renfrewshire.

Skelmorlie Castle, $1\frac{1}{2}$ mile S of Wemyss Bay station and $4\frac{1}{2}$ miles N by W of Largs, stands 1 furlong inland, on the N side of lovely Skelmorlie Glen. Its oldest part dates from 1502; and Pont described it in 1608 as 'a fair veill-built house, and pleasantly seated, decorated with orchards and woodes, the inheritance of Robert Montgomery, Laird thereof,' whose ancestor, George, was second son of the first Lord Montgomerie, and from him received in 1461 the lands of Skelmorlie, formerly held by the Cunninghams of Kilmaurs. The estate reverted by succession to the Eglington family; and in 1852, with consent of the late Earl, the old ruined mansion was restored by the late John Graham, Esq., a wealthy Glasgow merchant, who during his occupancy made it a picturesque and delightful residence. Under LARGS are noticed the Skelmorlie Aisle and the 'serpent mound.'—*Ord. Sur.*, sh. 29, 1873. See EGLINTON CASTLE; Gardner's *Wemyss Bay and Skelmorlie* (Paisley, 1879); and A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1885).

Skene, a parish of SE Aberdeenshire, whose church stands, 405 feet above sea-level, 6 miles S by E of Kintore and $8\frac{1}{2}$ W by N of Aberdeen, under which there is a post office, and with which Skene communicates daily by omnibus. It is bounded N by Kintore and Kinellar, E by Newhills, SE and S by Peterculter, SW by Echt, W by Cluny, and NW by Kennay. Its utmost length, from NW to SE, is 7 miles; its breadth varies between $1\frac{1}{2}$ and $4\frac{1}{2}$ miles; and its area is 10,516 acres, of which 270 are water. There is an extensive spinning and carding mill in the parish. Peterculter, $4\frac{1}{2}$ miles distant, is the nearest railway station. Oval Loch Skene (7×5 furl.) lies at an altitude of 276 feet on the SW border, and covers an area of $311\frac{1}{2}$ acres, 45 of which are in Echt. It contains pike; has a maximum depth of only 12 feet; receives Kinnernie or Corskie Burn, flowing $1\frac{1}{2}$ mile east-south-eastward along the Echt boundary; and sends off LEUCHAR BURN, creeping $3\frac{1}{2}$ miles southward and east-south-eastward along the Echt and Peterculter boundary, on its way to the river Dee. The surface sinks along Leuchar Burn to 234 feet above sea-level, and rises thence to 632 feet at the Hill of Kinnundy, 744 at the Hill of Keir, and 731 at the Hill of Auchronie. Formerly Skene had a bleak and barren appearance, but it has within recent times been greatly improved in the way of both reclamation and planting. Its highest grounds are now all either cultivated to the top or largely clothed with plantation. Only a small part of it, however, has a fertile soil—the greater part being either light or cold, and generally incumbent on clay. The predominant rock is granite. Fully two-thirds of the entire area are in tillage; one-eighth is under wood; and the rest is either pasture, moss, or waste. Antiquities are the 'Drum Stone' on the KINELLAR border, remains of tumuli and stone circles, traces of a watch-tower on the Hill of Keir, and supposed memorials of a Roman road from the Dee to the Don. Skene House, 3 miles WNW of the church, is a fine baronial edifice, part old, part modern. In 1880 it was purchased from the Earl of Fife by the late George Hamilton, Esq. Other mansions, noticed separately, are EASTERSKENE and KIRKVILLE. Skene is in the presbytery and synod of Aberdeen; the living is worth £205. The parish church, originally dedicated to St Bride, was rebuilt in 1801, and contains 700 sittings. The Free church stands $\frac{3}{4}$ mile to the W, near the NE shore of Loch Skene. There is an Evangelical Union church at Westhill. Four schools—the Central, Garlogie, Westhill, and Lyne Free Church—with respective accommodation for 160, 80, 100, and 100 children, had (1893) an average attendance of 94, 50, 72, and 56, and grants of £79, 18s. 6d., £44, 14s., £63, 8s., and

£49. Pop. (1801) 1140, (1831) 1677, (1851) 1862, (1871) 1842, (1881) 1787, (1891) 1673.—*Ord. Sur.*, shs. 76, 77, 1874-73.

Skene, Loch, a dark and lonely lake in the NE of Moffat parish, N Dumfriesshire, $\frac{3}{4}$ mile W of the meeting-point of the counties of Dumfries, Selkirk, and Peebles, $1\frac{1}{4}$ mile W of the source of the Yarrow, and $11\frac{1}{2}$ miles NNE of the town of Moffat. Lying 1680 feet above sea-level, it has an utmost length and breadth of 6 and $1\frac{1}{2}$ furlongs, and is of unknown depth. Its basin is mossy, bleak, and wild, White Coomb (2695 feet) rising to the S, and Locheraig Head (2625) to the N. Loch Skene affords good sport to the fisherman, its trout running 2 or 3 to the lb., and 8 to 10 lbs. being a fair day's catch. The stream by which the lake discharges its superfluent waters to the river Moffat forms the magnificent cascade called the GREY MARE'S TAIL. According to a geological authority a glacier once moved down towards Moffatdale, following the existing drainage line, viz., the courses of Midlaw and Tail Burns. The northern lateral moraine of this glacier—now represented only by mounds—acted as a barrier to the water flowing from the N, and thus Loch Skene was formed.—*Ord. Sur.*, sh. 16, 1864.

Skerray. See PORTSKERRA.

Skerries, Out. See HOUSEY SKERRIES.

Skerries, Pentland. See PENTLAND FIRTH.

Skerrow, Loch, a triangular lake near the Balmaghie boundary of Girthon parish, Kirkcudbrightshire, close to the railway, 13 miles WNW of Castle-Douglas. Lying 425 feet above sea-level, it measures $5\frac{1}{2}$ by 4 furlongs, is prettily studded with five or six copse-clad islets, and contains pike and the largest trout of any loch in the district, running up sometimes to 6 lbs.—*Ord. Sur.*, sh. 5, 1857.

Skerryvore Lighthouse, a lighthouse on a rock forming one of an extensive reef, 10 miles SW of the Isle of Tyree. Lying in the fairway of vessels making for the Clyde and Mersey, and exposed to the mighty 'fetch' of the Atlantic, this reef was long the terror of mariners. The rock on which the tower is built is composed of gneiss worn so smooth by the continued action of the sea that the foreman mason compared landing on it to climbing up the neck of a bottle. In order that the light might show far beyond the foul ground, the tower was so designed as to have a range of $18\frac{1}{2}$ nautical miles. The tower is 137 feet 11 inches high (158 feet to top of the lantern), 42 feet in diameter at base, decreasing to 16 feet at the top, and contains a mass of granite masonry of 58,580 cubic feet. For 26 feet in height the tower is solid, and the contents weigh nearly 2000 tons. The walls, as they spring from the solid, are $9\frac{1}{2}$ feet thick, gradually diminishing to 2 feet at the top. Above the solid the interior is 12 feet in diameter, divided into nine storeys, surmounted by a lightroom and lantern. Operations were commenced on the rock in 1838, and the light was exhibited in February 1844, six years being thus occupied in the work. The apparatus is dioptric revolving, the light attaining its greatest brilliance once a minute; the machinery which drives the apparatus is also employed to toll fog-bells. The cost of the work, including the small harbour for the attending vessel, and the dwellings for the keepers and seamen, was £86,977. The lighthouse, which was designed and erected by the late Mr Alan Stevenson, is a noble monument of his engineering skill. See his *Account of the Skerryvore Lighthouse* (Edinb. 1848).

Skiack, Loch. See DUNKELD, LITTLE.

Skiack, The, a troutful rivulet of Ross and Cromarty, formed by several head-streams that rise among the south-eastern and southern skirts of Ben Wyvis, and winding $10\frac{1}{2}$ miles east-north-eastward through Fodderty, Dingwall, and Kiltarn parishes till it falls into the Cromarty Firth, close to Kiltarn church. During a drought in summer, it almost disappears; but, after heavy rains or the thawing of winter snows, it is a voluminous and headlong torrent, which, but for embankments, would desolate the arable grounds on its banks.—*Ord. Sur.*, sh. 93, 1881.

Skibo Castle, a modern mansion in DORNOCH parish, Sutherland, 4 miles W by S of the town. Purchased in 1872 for £130,000, and greatly improved since then, the estate belongs to Evan Charles Sutherland, Esq. (b. 1835).—*Ord. Sur.*, sh. 94, 1878.

Skinnet. See HALKIRK.

Skindsdale, a stream of Clyne parish, Sutherland, rising at an altitude of 1900 feet on the E side of BEN-AN-ARMUINN, and running 13 miles eastward, south-eastward, and southward, till, after a total descent of nearly 1800 feet, it falls into the Black Water, 2 miles WNW of the head of Loch Brora.—*Ord. Sur.*, shs. 108, 109, 103, 1878-80.

Skipness (Norse 'ship point'), a village and a *quoad sacra* parish on the E side of Kintyre peninsula, Argyllshire. The village, lying on a small bay of its own name, at the northern entrance to Kilbrannan Sound, is $4\frac{1}{2}$ miles by water NNW of Loch Ranza in Arran, and 12 by road S by E of Tarbert. It has a post office, with money order, savings bank, and telegraph departments; and $1\frac{1}{2}$ mile to the NE is a quay, erected at a cost of £3000. The old castle of Skipness stands $5\frac{1}{2}$ furlongs E by N of the village and 3 WNW of low Skipness Point, which divides Kilbrannan Sound from the entrance to Loch Fyne. An imposing structure, of high antiquity, but in good preservation, it forms a square, with an inner court. The outer wall is 7 feet thick, 33 high, and 450 in circumference. The western side is flanked by a small central tower; whilst of two projecting towers, one at the SE and one at the NE corner, the former was known as Tur an t'sagairt ('the priest's tower'), and the latter was evidently the keep of the castle. A portcullis defended the entrance. Modern Skipness Castle is the seat of Robert Chellas Graham, Esq. (b. 1848), who is Lord of the Barony of Skipness, having purchased this property in 1867. The *quoad sacra* parish, forming the northern portion of the civil parish of SADDLE AND SKIPNESS, and constituted in 1871, is in the presbytery of Kintyre and the synod of Argyll; its minister's stipend is £165. The church, on the left bank of Claonaig Water, $2\frac{1}{2}$ miles WSW of Skipness village, was built in 1756 at a cost of £300, and was improved in the interior in 1892. Pop. (1871) 500, (1881) 470, (1891) 395, of whom 298 were Gaelic-speaking.—*Ord. Sur.*, sh. 21, 1870.

Skipport, Loch, an intricately ramified chain of marine sounds and straits across the island of South Uist, at the mean distance of about 5 miles from its N end. It is usually described as simply projecting into the island; but really bisects it from sea to sea, so as to render it two islands though one only in name. To add to the confusion, the loch or strait assumes, at the W end, the name of Loch Gamoselechan or Bee. All the land immediately connected with it is a maze of low rocky islands and promontories; forming the commencement of that chequered and diversified mixture of flat lands and waters which separates South Uist from Benbecula.

Skirling, a village and a parish of W Peebleshire. The village stands 690 feet above sea-level, $2\frac{1}{2}$ miles ENE of the town and station of Biggar, under which it has a post office.

The parish is bounded NE by Kirkurd, E and S by Broughton, Kilbucho, and Glenholm, and W and NW by Biggar in Lanarkshire. Its utmost length, from N to S, is 3 miles; its utmost breadth, from E to W, is 2 miles; and its area is 3427 $\frac{1}{2}$ acres, of which 5 are water. BIGGAR Water flows $1\frac{1}{2}$ mile eastward along all the southern boundary; and Spittal Burn, its affluent, traces most of the Lanarkshire border. Beside Biggar Water the surface declines to 640 feet above sea-level; and thence it rises northward to 920 feet near South Mains, 1035 at Skirling Craigs, 1163 near Townhead, and 1399 at Broomy Law near the northern extremity of the parish. The rocks are chiefly Silurian, and the soil is mostly light but fertile. Nearly four-fifths of the entire area are in tillage; about 35 acres are under wood; and the rest is partly moor but chiefly green pasture. Skirling Castle, an old baronial fortalice which stood in the south-western vicinity of the village,

belonged in the 16th century to Sir James Cockburn, a warm partisan of Queen Mary; and, demolished in 1568 by order of the Regent Moray, has entirely disappeared. A monastic establishment is believed to have stood on Kirklawhill farm; and coins of Adrian and Antoninus were found about 1814 near Greatlaws. James Howe (1780-1836), the animal painter, was the son of a former minister. The barony of Skirling, possessed by the Cockburns from about 1370 till 1621, since the close of the 17th century has belonged to the Carmichaels; and Sir Thomas David Gibson-Carmichael, Bart., of CASTLE-CRAIG, is sole proprietor. Skirling is in the presbytery of Biggar and the synod of Lothian and Tweeddale; the living is worth £330. The parish church, at the village, is a building of high antiquity, renovated in 1720, and extensively repaired in 1893. There is also a Free church; and a public school, with accommodation for 88 children, had (1893) an average attendance of 47, and a grant of £58, 0s. 6d. Pop. (1801) 308, (1831) 353, (1861) 317, (1871) 325, (1881) 274, (1891) 216.—*Ord. Sur.*, sh. 24, 1864.

Skye, an island in the W of the county of Inverness, of the whole area of which it forms a little more than one-seventh. It is the largest island of the Inner Hebrides, and the second largest of the whole group, as well as of all the islands lying off the coast of Scotland. It extends from N latitude $57^{\circ} 42' 30''$ at Rudha Hunish in the extreme N—though the outlying islets of Trodday and Fladdachuain are respectively $2\frac{1}{2}$ and 4 miles NE and NW of that point—to N latitude $57^{\circ} 1' 12''$ at Point of Sleat on the extreme S, and from W longitude $5^{\circ} 38' 50''$ at Rudha na Caillich at the S end of Kyle Rhea to W longitude $6^{\circ} 47' 8''$ at Eist on the extreme W of Duirinish. The shape of the island may be compared to that of the tail part of the body of a huge whale, the tail lying to the SE next the mainland, and the body stretching away to the NW; but it is a whale that has suffered from the onslaughts of the ocean, for the outline of the sides, instead of being smooth and regular as it would be in the animal, is everywhere cut into by sea lochs which deeply indent the island on every side. To the N and NE the island is bounded by the Minch, the distance across which, from Point of Aird near Rudha Hunish to the coast of Ross-shire at the mouth of Cairloch, is 19 miles; from the E side of Staffin Bay to Red Point at the N side of Loch Torridon it is 14 miles; and from the point at the S side of the entrance to Loch Torridon westward through the extremity of South Rona the distance is 12 miles. To the S of this the boundary is the Sound of RAASAY, the narrows of Raasay, and Loch na Cairidh, $\frac{1}{2}$ mile wide, between Skye and Scalpay. At the SE end the last widens out into the open sea-space where the Inner Sound and Loch Carron meet, the distance across from Broadford Bay to the SW corner of Applecross being 8 miles. From this point the coast curves east-north-eastward to form the right hand lobe of the tail, the point to the eastward being divided from the Lochalsh district of the mainland of Inverness-shire first by the narrow Kyle Akin (3 furlongs) and then by Loch Alsh (1 mile). From Loch Alsh along the bottom of the tail—that is, the SE side of Skye—the boundary is for 2 miles Kyle Rhea (barely $\frac{1}{2}$ mile), and for the remaining 19 miles the Sound of Sleat, averaging fully 1 mile in width, to the N side of Loch Hourn, 3 to 4 miles from Loch Hourn to Loch Nevis, and from $4\frac{1}{2}$ to 7 beyond Loch Nevis as it widens out into the sea of the Hebrides. To the W of the Point of Sleat, between Skye on the one hand and Rùm and Canna on the other, is Cullin Sound, which opens out at both ends into the sea of the Hebrides. Its width is noticed under Rùm. On the W and NW of the island is the Little Minch, the distance across which from Eist Point on the extreme W of Duirinish westward to Benbecula is 16 miles; from Vaternish Point at the extreme NW of Skye westward to Loch Maddy in North Uist it is 18 miles; and from Rudha Hunish north-westward to the mouth of East Loch Tarbert in Harris it is 16 miles. Along the narrow kyles and sounds on the E and SE the tides

rush with great speed and force, so much so indeed that sailing vessels cannot pass northwards through Kyle Rhea and Kyle Akin against an adverse tide. These straits are also of considerable depth. One basin, occupying Raasay Sound, the Inner Sound, and part of the Minch, has been already noticed under RAASAY; there is another at the point where the Inner Sound and Loch Carron meet which reaches a depth of 68 fathoms below the surrounding sea bottom, which has a depth of about 50 fathoms; and a long narrow one begins at the mouth of Loch Hourm, and extends down and beyond the Sound of Sleat, till it dies out about 3 miles NE of Eigg. Its depth at the entrance to Loch Hourm is 50 fathoms below the surrounding sea-bottom, which has a depth of about 60 fathoms, but the depression gradually diminishes to about 20 fathoms as the hollow extends south-westward. In Cuillin Sound, to the N of Rum, there is another basin, which reaches a depth of 74 fathoms beneath the surface of the surrounding sea-bottom, which has a depth of about 65 fathoms. Still another—and that a large one—extends from the N end of South Uist northwards through the Little Minch as far as Loch Seaforth in Lewis, but keeps mostly to the side next the Outer Hebrides, except along the W coast of Skye, where it occupies the greater part of the width of the strait, the depth of the portion opposite Dunvegan Loch being 36 fathoms below the surface of the neighbouring sea-bottom, which is about 60 fathoms deep. There are also smaller hollows at the mouths of Loch Sligachan and Loch Ainort, in Loch Alsh and the narrow part of the Sound of Sleat, and in Lochs Slapin, Scaavaig, Brittle, Eynort, and Bracadale; in Loch Bay off Loch Dunvegan, and near the mouth of Loch Diubaig on the S side of Loch Snizort. In several of these depressions groups of shells of Arctic habitat still linger, seeming to be survivals of those that lived in the British seas during the glacial epoch.

Coast, etc.—The coast-line is very irregular and broken. Beginning at the N end at Point of Aird $2\frac{1}{2}$ miles E of Rudha Hunish, the first opening is Kilmaluag Bay (4×4 furl.), and 4 miles SSE is Staffin Bay, $\frac{1}{2}$ mile across the mouth and $\frac{3}{4}$ mile deep. From Staffin Bay southward the line is very little broken for almost 15 miles till PORTREE Bay is reached. The next large opening, opposite Kyle More, between Raasay and Scalpay, is Loch Sligachan, averaging $\frac{1}{2}$ mile wide, and 3 miles from entrance to head; and 3 miles SE of this is Loch Ainort, $\frac{1}{2}$ mile wide and $\frac{1}{2}$ mile from entrance to head. At the S end of the open sea-space where Loch Carron opens out to the Inner Sound is Broadford Bay, $\frac{1}{2}$ mile wide and $\frac{3}{4}$ mile from the entrance to head; and to the E of it is Breakish Loch, 1 mile long by about 100 yards wide; while immediately to the E of Kyle Akin is Loch na Beiste, 5 furlongs wide at the entrance and 1 mile from that to the head of the loch. In the SE side the only opening of any size is Loch na Dal (1 mile wide at entrance and $\frac{1}{2}$ deep) near the centre, corresponding to the gap between the lobes of the tail of our fancied whale. Close to the mouth of this loch is the small but well-sheltered harbour of ISLE ORNSAY. The peninsula to the SW of this is Sleat, and to the W of the northern part of it is a nameless inlet, which branches off on the E into Loch Eishort, and on the N into Loch Slapin. The former is $\frac{1}{2}$ mile wide across the mouth from Rudha Suishnish between the two lochs and Dunscaith Castle, and is 6 miles from entrance to head; but along the upper $3\frac{1}{2}$ miles it narrows considerably, the average width being from $2\frac{1}{2}$ to 3 furlongs, but in some places less. Loch Slapin, 2 miles wide at the entrance and $3\frac{1}{2}$ miles deep, also narrows considerably in the upper reaches. The nameless inlet lying outside these lochs may be taken as 3 miles wide and 4 in depth from the entrance, between Tarskavaig Point in Sleat and Strathaird Point, to Rudha Suishnish. The promontory to the W of this and Loch Slapin is Strathaird, immediately to the W of which is Loch Scaavaig, $2\frac{1}{2}$ miles wide at the entrance and $\frac{1}{2}$ from this to the head of the loch. The outer part of the western side is formed by the island of Soay, which is separated

from the mainland of Skye on the N and NW by Soay Sound, from 5 furlongs to 1 mile wide. The point at the extreme W corner of this is Rudha an Dunain, immediately to the NW of which is Loch Brittle, $1\frac{1}{2}$ mile wide and $\frac{1}{2}$ from entrance to head, and 3 miles NW of it is Loch Eynort, averaging 3 furlongs wide and $3\frac{1}{2}$ miles from entrance to head. Six miles farther to the NW is the large Loch Bracadale, 4 miles wide across the mouth from Rudha nan Clach (SE) to Idrigill Point (NW), and with an area of over 16 square miles. From the E side the long curved Loch Harport branches off with an average width of $\frac{1}{2}$ mile and over 6 miles long. At the top of Loch Bracadale are the smaller Loch Caroy (N), Loch Valtin (N), and Loch Varkasaig (NW). The district west and south of a line drawn from Loch Scaavaig to the top of Loch Sligachan on the E and to Lochs Bracadale and Harport on the NW is called Minginish. Beyond Loch Bracadale along the SW coast the only other inlet of any size is the shallow Moonen Bay close to Eist at the extreme western point of the island, but along the NW there are in all four openings that need be mentioned, and of these two are of very large size. The first of these onward from Eist is Loch Pootliel, a triangular opening about 2 miles deep, and then in order are Loch Dunvegan, Loch Snizort, and Score Bay, the northern part of the latter being known as Duntulm Bay, beyond which is the small Loch Hunish, with Rudha Hunish, the most northerly point of the island, on its N side. Loch Dunvegan is fully 3 miles wide across the entrance from Dunvegan Head (SW) to Ardmore Point (NE), and is wider inside. Two and a half miles from the entrance it branches off into two forks, of which the one to the S retaining the name of Dunvegan extends south-eastwards for 6 miles, while the other runs eastward for $2\frac{1}{2}$ miles, and bears the name of Loch Bay. To the NE of Ardmore Point is the small Ardmore Bay. The peninsula connected by the isthmus between Dunvegan Bay—in all its length—and the north-western division of Loch Bracadale, is Duirinish. Two and a half miles NE of Dunvegan is Loch Snizort, the largest inlet in the whole island, which may, in its widest extent, be taken as 8 miles wide across the mouth along a line from Vaternish Point east-north-eastward, and from this it extends south-eastward for over 8 miles. Near the centre of the SW side is the semicircular Aros Bay, and on the extreme S the small Loch Diubaig, while from the SE pass off Loch Greshornish (SW), averaging 3 furlongs wide and 3 miles long; and Loch Snizort Beag (SE) from 2 to 4 furlongs wide and fully 6 miles long, but very shallow in its upper reaches. Near the centre of the E side of the main loch is Uig Bay. Loch Snizort is sometimes confined to the portion of the Loch to the S of Uig Bay. The district between Loch Snizort and Loch Dunvegan is Vaternish, which terminates in Vaternish Point at the extreme NW of the island; and that E of Loch Snizort and between it and the E coast is Trotternish. These inlets give the island an enormous extent of coast, the total length being probably over 900 miles. Most of the lochs afford sheltered anchorage, except from particular winds, but great care has to be taken in them, and indeed anywhere along the Skye coast, where mountains overhang the shore, in consequence of the violent and dangerous squalls that suddenly come whirling down from the high land, and for which Lochs Scaavaig and Sligachan are particularly noted. 'There's aye wind among the gullies yonder,' says Robert Buchanan speaking about Loch Scaavaig, through Hamish Shaw, in *The Hebridean Isles*, 'and the squalls at Sligachan are naething to what ye hae here. I wouldna sail about Scaavaig in a lug-sail skiff'—no, if I had the sheet in my hand and the sail nae bigger than a clout—in the finest day in summer. It strikes down on ye like the blows o' a hammer—right, left, ahint, before, straight down on your head, right up under your nose—coming from Lord kens where, though the sea be smooth as my cheek. I've seen the punt heeling o'er to the gunnel with neither mast nor sail. I mind o' seeing a brig carry away her topmast, and tear her foresail like a rag, on a day when

we would have been carrying just a reef in the mainsail of the *Tern*; and I've seen the day when the fishing-boats running out o' the wee harbour there would be taking their sails on and off, as the puffs came, twenty times in as many minutes. Many's the life's been lost off Skye, wi' the wind frae these hills.'

From the N side of Score Bay all round the N end of the island down to Loch Staffin, and beyond it, the coast is formed by precipitous cliffs of basalt, which are remarkable in many places for the great regularity of their columnar formation. The cliffs extend also down along the Sound of Raasay to Portree, and though they change their character somewhat, the cliff scenery along this whole stretch is excellent, and among the best things of its kind in Britain (see PORTREE). 'The coast views here,' says Robert Buchanan in *The Hebridean Isles*, referring to this tract from Dunlum to Portree, 'were beyond expression magnificent. Tinted red with dawn, the fantastic cliffs formed themselves into shapes of the wildest beauty, rain-stained and purpled with shadow, and relieved at intervals by slopes of emerald where the sheep crawled. The sea through which we ran was a vivid green, broken into thin lines of foam, and full of innumerable Medusæ drifting southward with the tide. Leaving the green sheep-covered island of Trodroy on our left, we slipped past Aird Point, and sped swift as a fish along the coast, until we reached the two small islands off the northern point of Loch Staffin—so named, like the island of Staffa, on account of its columnar ridges of coast. Here we beheld a sight which seemed the glorious fabric of a vision: a range of small heights sloping from the deep green sea, every height crowned with a columnar cliff of basalt, and each rising over each, higher and higher, till they ended in a cluster of towering columns, minarets, and spires, over which hovered wreaths of delicate mist, suffused with the pink light from the east. We were looking on the spiral pillars of the Quiraing. In a few minutes the vision had faded; for the yacht was flying faster and faster, assisted a little too much by a savage puff from off the Quiraing's great cliffs; but other forms of beauty rose before us as we went. The whole coast from Aird Point to Portree forms a panorama of cliff scenery quite unmatched in Scotland. Layers of limestone dip into the sea which washes them into horizontal forms, resembling gigantic slabs of white and grey masonry, rising sometimes stair above stair, water-stained and hung with many-coloured weeds; and on these slabs stand the dark cliffs and spiral columns: towering into the air like the fretwork of some Gothic temple, roofless to the sky; clustered sometimes together in black masses of eternal shadow; torn open here and there to show glimpses of shining lawns sown in the heart of the stone, or flashes of torrents rushing in silver veins through the darkness; crowned in some places by a green patch, on which the goats feed small as mice; and twisting frequently into towers of most fantastical device, that lie dark and spectral against the grey background of the air. To our left we could now behold the island of Rona and the northern end of Raasay. All our faculties, however, were soon engaged in contemplating the Storr, the highest part of the northern ridge of Skye, terminating in a mighty insulated rock or monolith which points solitary to heaven, two thousand three hundred feet above the sea, while at its base rock and crag have been torn into the wildest forms by the teeth of earthquake, and a great torrent leaps foaming into the Sound. As we shot past, a dense white vapour enveloped the lower part of the Storr, and towers, pyramids, turrets, monoliths were shooting out above it like a supernatural city in the clouds. At every hundred yards the coast presented some new form of perfect loveliness.'

From Portree southward to Loch Alsh the coast is low, and possesses but few marked features; and the same remark may be made of the shore along the Sound of Sleat, although from it may be obtained magnificent views of the fine mountain scenery around Lochs Houran and Nevis on the mainland side of the Sound. To the

W of Sleat round Lochs Eishort and Slapin the scenery improves, and the cliffs and mountain slopes overhanging the latter are, especially under certain conditions of light and shade, very grand and impressive. To the W of Strathaird round Loch Seavaig the outlying ridges of the Cuillin Hills slope steeply down upon the sea without any intervening cliffs, and produce a coast remarkable for its difference of character from that of any other coast in the kingdom, and for a curious weirdness that is indicated, though with a suggestive want of accuracy, in Thomson of Duddingstone's picture of the entrance to the loch (see SCALPAIG); and the lonely cliff-girt gorge of CORUIK at the NW corner is the eeriest and most solemn place in Britain—'perpetual twilight, perfect silence, terribly brooding desolation.' Along Soay Sound and round Loch Brittle such cliffs as exist are low, and about the loch they are disposed in terraces, but from this to Talisker Bay, $1\frac{1}{2}$ mile S of the entrance to Loch Bracadale, there is a line of lofty and picturesque cliffs. Round Talisker Bay, and all round Loch Bracadale, the shores are generally low, flat, and cultivated, as they are likewise about the E and S of Loch Snizort, and on northwards by Score Bay; but along the tract between Loch Bracadale and Loch Snizort there is a considerable amount of good rock scenery (see BRACADALE, DUIRINISH, DUNVEGAN, SNIZORT, and UIG).

All round the coast are a number of islands and islets, of which the two principal on the N have been already mentioned. To the N of Staffin Bay are Sgeir Eirin and Eilean ALTAVAIG ($\frac{1}{2} \times \frac{1}{2}$ mile), and at the E side the triangular Staffin Island ($\frac{1}{2} \times \frac{1}{2}$ mile). Extending down the E coast is the chain formed by South RONA, Eilean Tigh, FLADDAY, and RAASAY, and to the SE of the last is SCALPAY, opposite Loch Ainort. One mile E of the centre of Scalpay is LONGAY (5×3 furl.), and 2 miles SE is PABAY ($\frac{3}{2} \times \frac{1}{2}$ mile), and these with the small Eilean Ban at the NW end of Kyle Akin complete the list of important islands on the E coast. Along the Sound of Sleat the only island is Isle Ornsay, and the next of importance is Soay, to the W of Loch Seavaig. In Loch Bracadale are WIAY and the smaller Harlosh ($\frac{1}{2} \times \frac{1}{2}$ mile), Turner (3×2 furl.), and Ornsay (4×1 furl.). Near the centre of the outer part of Dunvegan Loch is ISAY or ISSAY Island, and close to it on the NE are Mingay Island ($5 \times \frac{3}{8}$ furl.) and the small Clett, while far up the southern branch are Eilean Gaibh, Eilean Dubh, Eilean Mor, with a number of small islets. Near the NW of Loch Snizort are the ASCRIB Islands, consisting of Eilean Iosal, Eilean Creagach, Eilean Garave, and South Ascrib, with some smaller islets. The only one of any size is South Ascrib ($\frac{1}{2} \times \frac{1}{2}$ mile). Near the entrance to Loch Greshornish is the small Eilean Mor. Of these only Isle Ornsay, Pabay, Raasay, South Rona, Scalpay, Soay, and Wiay are inhabited.

Surface, &c.—The length of Skye in a straight line from Rudha Hunish south-south-eastward to Point of Sleat is $48\frac{1}{2}$ miles, and from Vaternish Point south-eastward to Isle Ornsay, $44\frac{1}{2}$; while the average breadth of the island is about 12 miles; and the area, inclusive of foreshore, 411,708/652 acres. The breadth of the land is in some places very much more than the average, and in others much less, e.g., from the E coast of Moonen Bay eastward to Portree Harbour the distance is 20 miles; while from the top of Loch Harport to the top of Loch Sligachan is only $5\frac{1}{2}$ miles, and from the head of Loch Eishort to the head of Loch na Dal is barely $1\frac{1}{2}$ mile; but so much is the island indented by the extensive sea-lochs already described, that but few places are more than $3\frac{1}{2}$ miles distant from the sea, and none more than $4\frac{1}{2}$. The surface, with the exception of Kilmuir—the plain of which is the largest continuous tract of arable land in the island—and a small tract near Loch Bracadale, consists almost entirely of three distinct groups of hills, with intervening stretches of undulating moorland of considerable altitude. From the N end of the island the ground slopes downward from the heights overlooking the sea, and then rises

again to another series of hills westward from Staffin Bay, the highest summits being Sgurr Mor (1460 feet) and Meall na Suiramach (1779), NW of the QUIRAING. The rocks are basaltic, and the cliffs in many places show fine examples of columnar structure. From this point a long ridge extends in a southerly direction towards Portree, with an average elevation at the N end of from 1000 to 1500 feet; in the centre, of from 1700 to 2300 feet; while at the S end it slopes down to about 1000, but near the extremity rises again at Beinn a' Chearacail to 1817. The highest points from the N end southwards are Bìoda Buidhe (1523 feet), Beinn Edra (2003), Creag à Lain (1995), Bac a Ruadh (2091), The Storr (2360), and Beinn a' Chearacail (1817). The whole extent of the ridge, with its picturesque basaltic cliffs, commands wide and extensive views. 'On the north-east, facing the sea, it dips down suddenly, with no end of picturesque craggy spurs and green knolls, very peculiar and fairy-like. Then there is a wide expanse of solitary moor, with here and there a small lake glistening in the sun, then green inhabited spots away to the coast-line, which is for many miles a lofty terrace of basalt, resting on limestone, with columns in some places as regular as those of Staffa, but on a larger scale. This whole district is called the "East Side," and there is no part of Skye more picturesque, though, with the exception of Quiraing, which is the culminating point of interest, it is generally quite unexplored.' The Storr is an isolated igneous pyramid, 160 feet high, that has separated at some distant time from the rest of the mass, and slid forward. Apart from the cliffs the green terraced hills almost call to mind in bright weather the soft pastoral heights of the southern uplands. The second group of hills lies along the SE from the Point of Sleat to Loch Alsh, and has in the peninsula of Sleat an average altitude of from 800 to over 900 feet, the highest point being Sgorach Breac (977) between Isle-Ornsay and the head of outer Loch Eishort. At the head of Loch na Dal the ridge is cut by the low ground between the head of that loch and upper Loch Eishort, but, immediately beyond, it reaches a height of 1427 feet at Beinn Bhreac, and passes along the coast by Beinn na Seamraig (1839) and Ben Alask (1984) to the highest summits, Sgurr na Coinnich (2401) and Beinn na Caillich (2896) overlooking Kyle Rhea. To the W of these is Beinn na Créine (2000 feet). The hills along this part of the group descend rapidly to the sea on the SE, but slope more gently to the NW, where there is a tract of low ground extending from Kyle Akin to Broadford Bay, and thence across the island to Loch Slapin, the latter portion being bounded on the E by undulating ground, the highest point of which, at Beinn a' Chàirn, near Boreraig, is 983 feet above sea-level. Occupying the space bounded on the E by a line drawn from Broadford to the middle of the E side of Loch Slapin, and on the W by a line drawn from the head of Loch Sligachan to the head of Loch Brittle, is the wildest and most mountainous part of the island, occupied by the hills that may be spoken of collectively as the Cuillin (or CUCHULLIN) group, of the principal summits of which the lower have a range of over 2300 feet and the higher of over 3000. The group consists of two distinct portions totally different in both rock formation and external appearance. To the NE between Broadford and Loch Sligachan are the Red Hills, which are syenitic in structure and pyramidal in shape. Composed of rock which weathers and decomposes with great readiness, their slopes are formed by masses of bright red detritus—whence the name—only relieved here and there by strips of bright green sod. View hunters often vote them tame, but seen in proper light—as all West Highland scenery must be—especially when the sun is well down in the west, and the evening clear, they present as fine a 'bit' of colour as could be wished. The principal summits are Beinn Dearg Mhòr (2323 feet) and Beinn na Caillich (2403) between the head of Loch Slapin and Broadford; Glas Bheinn Mhòr (1851), S of Loch Ainort; Beinn Dearg Mheadhonach (2094), Beinn

Glamaig (2537), S of Loch Sligachan; and Marsco (2414), farther S still, E of the upper part of Glen Sligachan, opposite Scur nan Gilleann. The red colour does not prevail universally, but it occupies by far the larger space, and is the more prominent from its superior brightness. The other portion consists of hypersthene rocks of Laurentian age, and noted for their dark colour. 'The darkness of that mass is indeed extraordinary, and adds much to the wildness of aspect and grandeur of effect produced by the rugged and bold outlines of the mountains of which it is formed. No light seems to harmonise their colour to its place in the general landscape; perpetual shadow seems to cover them in every state of the atmosphere, and when the clouds involve their summits a deep and dark abyss seems opened beneath into which the eye vainly endeavours to penetrate. Their exterior outline is equally remarkable, as well for the contrast it presents to the tame and smooth boundary of the Red Hills as for its peculiarly rugged and serrated form. Pinnacles and projecting crags darkly indenting the sky rise along the whole line, marking by their acuteness and permanence the durability of the rock of which they are composed.' It is this dark colour and weird outline that gives them their deep, mysterious, awe-inspiring look. 'The enormous bulks, their gradual receding to invisible crests, their utter movelessness, their austere silence daunt you. You are conscious of their presence, and you hardly care to speak lest you be overheard. You can't laugh; you would not crack a joke for the world. Glen Sligachan would be the place to do a little self-examination in. There you would have a sense of your own meannesses, selfishnesses, paltry evasions of truth and duty, and find out what a shabby fellow you at heart are; and, looking up to your silent father-confessors, you would find no mercy in their grim faces.' There is a good inn at Sligachan, which, however, is often full and overflowing in summer, as indeed are all the Skye hotels. The Cuillin Hills proper may be said to be enclosed by lines drawn from the head of Loch Sligachan to the NE corner of the head of Loch Savaig on the E and to the head of Loch Brittle on the W, the summits forming a long sinuous ridge from N to S, and the highest in that order being Sgurr nan Gilleann (3167 feet), Bruach na Frithe (3143) to the W, Sgurr Thuilm (2885) to the WNW, Sgurr na Banachdich, near the centre of the ridge, with a NW summit (3167), a SE one, the highest point in Skye (3234), and outlying shoulders to the W and SW, Sgurr nan Gobhar (2047) and Sgurr Dearg (2012); to the SE of this is Sgurr Sgumain (3104)—with a southern shoulder 2507—Sgurr nan Eag (3037) and Gars-bheinne (2934), from which the ground slopes to Loch Savaig. When the air is clear, which it often is in Skye, the Cuillin Hills are seen to be a group of magnificent mountain scenery. To the ESE of Sgurr na Banachdich is Loch Coruisk, to the N of which is the ridge of Drumhain, with an extreme height of 1622 feet; and N of this again the deep, mysterious looking Harta Corrie. The eastern side of the ridge of the Cuillins proper is marked to the N by Glen Sligachan, and to the S by Strath na Creitheach opening on to the NE of Loch Savaig at Camasunary, the two glens forming a continuous hollow across the island. To the E of Strath na Creitheach is the long black pinnacled ridge and huge precipices of Mount BLAVEN. The top of Blaven is 3042 feet above sea-level, and there is a northern shoulder, Garbh-bheinn (2649). Between this grand mountain district and a line drawn from Loch Snizort to Portree are the little valley of Talisker, the green pastures about Lochs Brittle and Eynort, and the low open cultivated ground about Loch Bracadale; but with these exceptions the whole country is an undulating upland, averaging from 600 to 1000 feet and upwards in height, almost entirely covered with brown heath, and somewhat bleak and bare in appearance, though at the proper season even this is relieved by the great masses of purple blooming heather. The basaltic pillars at Brish-meall or Preshal More, near Talisker Bay, are worthy of notice. A

number of summits to the W of the Cuillins reach a height of from 1200 to 1350 feet, but the highest points are the flat-topped Heaval More (1538) and Heaval Beg (1601), generally known as Macleod's Tables, in the S of Duirinish. In Vaternish the highest point is Ben Geary (929 feet), at the entrance to Loch Dunvegan.

Lochs and Rivers.—There are a considerable number of fresh-water lochs and lochans, but none of them are of any great size, the principal being Lochs Coruisk ($1\frac{1}{2} \times \frac{1}{2}$ mile) at the top of Loch Scaig, Leathan ($\frac{3}{4} \times \frac{1}{2}$ mile), Fada ($\frac{3}{4} \times \frac{1}{2}$ mile), both in the parish of Portree; Duagrich, in the parish of Bracadale; Cill Chriost ($\frac{3}{4} \times$ nearly $\frac{1}{2}$ mile), na Creubhaig (7×2 furl.), both in the parish of Strath; nan Uamh ($\frac{1}{2} \times \frac{1}{2}$ mile), Dhùghail (3×2 furl.), and a' Ghlinne (4×1 furl.), all in the parish of Sleat. Many of them abound in trout, and though all the best are preserved it is not very difficult to obtain permission to fish, while some are quite free. Loch Columkill, 2 miles N by W of Uig Bay, in Kilmuir, once the largest stretch of fresh water in Skye and covering over 300 acres, was drained many years ago. The streams are very numerous, but none of them are large except during, and after, heavy rains, when they sometimes do a considerable amount of injury. For instance, on the night of the 'Big Flood,' in October 1877, the stream from Glen Uig and the river Rha, whose mouths are generally nearly 200 yards apart, came down in such high flood that Uig Lodge, which stood on the ground between, was swept away by their united waters; while the same rainfall so flooded the streams between Uig and Portree that all the bridges along the road were carried away. The principal streams are the Kilmaluag flowing to the bay of the same name, the Kilmartin entering the S side of Staffin Bay, the Bearreraig from Loch Leathan, the Chracraig and the Leasgeary, both entering the N side of Portree Harbour, the Varragill flowing northward to the head of Portree Loch, the Sligachan flowing from Harta Corrie northward to the head of Loch Sligachan, the Broadford from Loch Cill Chriost to the W corner of Broadford Bay, the Abhuinn Lusa entering the sea 2 miles E of Broadford Bay, the Brittle and Eynort entering the sea at the heads of the lochs of the same names, the Ord at the S side of Loch Eishort, the Talisker at Talisker Bay, the Drynoch at the head of Loch Harport, the Ose at the E side of Loch Bracadale, the Glendale entering Loch Pooltiel, the Treaslane on the S side of Loch Snizort Beag, the Snizort at the head, and the Haultin, Romesdal, and Hinnisdal on the NE side of the same loch; and the Uig and Rha at Uig Bay. The Snizort and the Varragill are the largest streams, but all those mentioned contain salmon and sea and burn trout.

Scenery, etc.—The grand and beautiful scenery for which Skye is noted is not to be found all over the island. As has been already indicated, much depends on the coast, and lies in the ever-changing disposition and aspects of the rocks and mountain masses to be seen in sailing round the island, while in the interior the portions worth seeing are confined to certain districts—particularly about the QUIRAING, Storr, and the Cuillin group of hills—and lie along certain well-known routes, and the large remaining portions are, as often as not, mere 'weary wastes expanding to the skies,' bleak, bare, and dismal. Woods are rare. Only in the grounds of modern or recently planted mansions is anything seen worthy of being called a tree. 'We passed,' says Alexander Smith in describing a drive through one of these wastes, 'through a very dismal district of country. It was precisely to the eye what the croak of the raven is to the ear. It was an utter desolation, in which Nature seemed deteriorated and at her worst. Winter could not possibly sadden the region; no spring could quicken it into flowers. The hills wore for ornament but the white streak of the torrent; the rocky soil clothed itself with no heather. . . . Labour was resultless; it went no further than itself—it was like a song without an echo.' Yet, this notwithstanding, the constantly changing atmospheric effects on the hills, whether distant or close at hand

are always magnificent, and what is grand is grand, standing in all respects by itself in British scenery. As Sheriff Nicholson—one of the truest of the sons of the Isle of Mist—has it—

'Let them sing of the sunny South,
Where the blue Ægean smiles,
But give to me the Scottish sea,
That breaks round the Western Isles!
Jerusalem, Athens, and Rome,
I would see them before I die!
But I'd rather not see any one of the three,
Than be exiled for ever from Skye.
Lovest thou mountains great,
Peaks to the clouds that soar,
Corrie and fell where eagles dwell,
And cataraacts dash evermore?
Lovest thou green glassy glades,
By the sunshine sweetly kist,
Murmuring waves and echoing caves?
Then go to the Isle of Mist!

Besides all this, for those who are weary from excess of toil and wish for rest and change, the island has the charm of its seclusion—not now, however, quite so great as formerly, thanks to the tourist rush—and its utter unlikeness to anything on the mainland except the western districts of Ross and Sutherland, and over these it has the advantage of much greater accessibility. 'Jaded and nervous with eleven months' labour or disappointment, there will a man find the medicine of silence and repose. Pleasant after poring over books to watch the cormorant at early morning flying with outstretched neck over the bright firth; pleasant lying in some sunny hollow at noon to hear the sheep bleating above; pleasant at evening to listen to wild stories of the isles told by the peat-fire; and pleasantest of all, lying awake at midnight, to catch, muffled by distance, the thunder of the northern sea, and to think of all the ears the sound has filled. In Skye one is free of one's century; the present wheels away into silence and remoteness. . . . In Skye the Londoner is visited with a stranger sense of foreignness than in Holland or in Italy. To visit Skye is to make a progress into "the dark backward and abysm of time." You turn your back on the present and walk into antiquity. You see everything in the light of Ossian as in the light of a mournful sunset. Everything about the traveller is remote and strange. You hear a foreign language; you are surrounded by Macleods, Macdonalds, and Nicholsons; you come on grey stones standing upright on the moor—marking the site of a battle or the burial-place of a chieftain. You listen to traditions of ancient skirmishes; you sit on ruins of ancient date in which Ossian might have sung. The loch yonder was darkened by the banner of King Haco. Prince Charles wandered over this heath or slept in that cave. The country is thinly peopled, and its solitude is felt as a burden. The precipices of the Storr lower grandly over the sea; the eagle has yet its eyrie on the ledges of the Cuchullins. The sound of the sea is continually in your ears; the silent armies of mists and vapours perpetually deploy; the wind is gusty on the moor; and ever and anon the jags of the hills are obscured by swirls of fiercely-blown rain. And more than all, the island is pervaded by a subtle spiritual atmosphere. It is as strange to the mind as it is to the eye. Old songs and traditions are the spiritual analogues of old castles and burying-places—and old songs and traditions you have in abundance. There is a smell of the sea in the material air, and there is a ghostly something in the air of the imagination. There are prophesying voices amongst the hills of an evening. The raven that flits across your path is a weird thing—mayhap by the spell of some strong enchanter a human soul is balefully imprisoned in the hearse-like carcase. You hear the stream and the voice of the kelpie in it. You breathe again the air of old story-books; but they are northern, not eastern ones. To what better place, then, can the tired man go? There he will find refreshment and repose. There the wind blows out on him from another century. The Sahara itself is not a greater contrast from the London street than is the Skye wilderness.'

The origin of the name is uncertain. Some say the Scandinavian *Ski*, 'cloud' or 'vapour,' and hence *Eilean Skianach*, 'the island of mist;' others take it from the Gaelic *Skianach*, 'winged,' from the resemblance of the half-detached peninsulas to wings. The island seems to be the *Scetis* of Ptolemy, and the oldest form is probably *Sgithridh*, and there the matter must be left. During the period when the Hebrides belonged to Norway, the Norsemen, though they held the people in subjection, seem never to have made large settlements on the island, for almost all the place-names, except in the N and NW and along the E coast, are Celtic, not Scandinavian. For such history as the island then had, reference may be made to the article on the HEBRIDES. Traditional history associates many of the localities with Ossian, and during the Middle Ages the only events of local importance are connected with clan feuds which cannot be here detailed. The northern branch of the Macdonalds possessed the whole of Trotternish down as far as Portree, a strip extending along the SW coast from the W side of Loch Scaavaig, along by the head of Loch Slapin to the head of Loch Eishort, all the promontory of Sleat, and the whole of the coast beyond as far as the N end of Kyle Rhea. All the E coast from Portree to Loch Alsh, including Scalpay, belonged to the Mackinnons; Vaternish and Dunvegan to the Macleods of Lewis; and Duirinish and the SW coast down to Loch Scaavaig, inclusive of Soay, to the Macleods of Harris. The support the clans afforded to the various rebellious Lords of the Isles led to many royal expeditions against them, one of the most noteworthy being that commanded by James V. in person in 1542. The incidents connected with the adventures of Prince Charles Edward Stewart after the battle of Culloden will be found noticed under the places with which they are more immediately connected, as will also those connected with the visit of Dr Johnson in 1773. Of more recent history the island had none till 1881, when the bad seasons that prevailed, and the partial failure of the fishing industry, with which so many of the people are connected, began to cause distress among the crofter population, and in 1884 an agitation arose among them for a thorough revision of the terms on which they held the land. To such a length did matters go in regard to seizure of grazings belonging to adjacent sheep farms of large size, defiance of consequent interdicts of the Court of Session, and resistance to the police, that a special police expedition had to be despatched by steamer from Glasgow; ultimately a gun-boat was sent to make arrests, and the police force of the county of Inverness was temporarily increased by fifty men. After a lull, fresh disturbances of the same nature, and culminating in a determined assault on a number of policemen, took place, and in the end of the year it became necessary to send to the island an armed expedition, consisting of a troop-ship, two gun-boats, and a steamer with a special police force. A large body of marines was landed and marched through several of the disturbed districts, and small bodies of them left at one or two points to protect police forces there stationed. The withdrawal of the soldiery in 1885 proved the signal for fresh outrages, in connection with which a number of men from two of the most disturbed districts, at Valtos near Loch Staffin and Glendale, were tried and sent to prison. Partly, however, through the beneficial action of the Crofters Commission, the Western Highlands and Islands Commission, a colonisation scheme, and partly by the passing by Parliament of a land bill considerably in their favour, the agitation has almost completely died out.

Geology.—None of the Western Isles presents more remarkable geological phenomena than Skye. The greater part of the island is occupied by contemporaneous and intrusive volcanic rocks of Tertiary age, the former being arranged in great horizontal sheets piled on each other to a considerable depth. At intervals round the coast fragments of Secondary strata, ranging from the Poikilitic beds underneath the Lias to the horizon of the Oxford Clay, are met with.

Originally buried underneath a vast pile of basaltic lavas, these fossiliferous Secondary rocks have been exposed by denudation; and though their development is but limited, they are of the highest importance in enabling the geologist to interpret the history of the Mesozoic formations in the N of Scotland. Skye has always been a favourite resort for students of geology. The researches of Macculloch, Professor Edward Forbes, Sir A. Geikie, Dr Wright, Dr Bryce, Professor Judd, and others, have thrown much light on the geological history of this interesting island so far as the Secondary formations and Tertiary volcanic rocks are concerned. The geological structure of the SE peninsula, extending from Kyle Akin to the point of Sleat, is, however, rather complicated. This area is occupied by representatives of the Torridon sandstone, by Cambrian strata and crystalline schists, lying in the line of strike of the great terrestrial displacements extending from Ströme Ferry to Loch Eriboll. Hence the sections in Sleat must be read in the light of recent investigations in the counties of Sutherland and Ross and Cromarty.

The greater portion of Sleat is composed of various subdivisions of the Torridon sandstone, lying to the east of the great post-Cambrian displacements. They form the most elevated ground extending along the eastern side of the peninsula (Ben na Cailleach). The strata belong both to the middle and lower divisions of the Torridon sandstone as developed on the mainland. The coarse false-bedded grits of the middle division are repeated by a series of folds in the area lying to the south-west of Kyle Akin, and they are succeeded towards the east by the representatives of the lower division. From the annual report of the Geological Survey for 1893, it seems that Mr Clough has separated the lowest division into the following groups, in descending order:—(4) Kinloch beds, comprising dark grey sandy shales and fine-grained grey grits, with thin calcareous bands; (3) Ben a Seamraig grits, with some bands of sandy shale; (2) dark grey sandy shales, with fine grits and thin impure limestone bands; (1) Epidiotic grits, of a marked green colour. Along the eastern limits of the Torridon area the foregoing strata are inverted, being inclined towards the east at varying angles. Hence, as the observer passes east to Kyle Rhea, he approaches the basal beds of the system—the latter being represented by the green epidiotic pebbly grits. The inverted unconformable junction with the crystalline schists is not visible, however, near Kyle Rhea, for not far to the south of that locality on the shore the crystalline schists are brought into conjunction with the epidiotic grits by a reversed fault. An interesting feature in one of the sub-zones of this lowest division of the Torridon sandstone, is the occurrence of certain black bands, sometimes several inches thick, consisting of magnetite, with zircon and epidote. The crystalline schists reappear along the east coast of Sleat to the south of Isle Ornsay. From the evidence obtained in the peninsula it is clear that the lowest division of this formation is undergoing important modifications, when traced southwards from the mountainous regions of West Ross. Notwithstanding the presence of impure limestones and dark shales, which might be expected to yield fossils, no organic remains have as yet been found in these beds.

Between Isle Ornsay and the Ord the Torridon sandstone passes gradually upwards into the basal quartzites of the Cambrian system. Various zones of the Cambrian rocks of Sutherland are met with in this area, repeated partly by reversed faults and folds. Between Strath Suardal, near Broadford and Loch Slapin, the Torridon sandstone is made to overlie the Cambrian limestone by means of a great thrust. The horizon of this limestone has been clearly shown by Sir A. Geikie, who has obtained from the beds in Allt a Mhulin, south of Broadford, some of the characteristic fossils found in the Durness limestone of Sutherland.

The lowest members of the Secondary formations rest on the Torridon sandstones with a marked unconformability. The relation between the two may be seen at several points in Strath, and particularly on the shore

at Lussay, where the Poikilitic strata, marking the base of the Lias, consist of a thin layer of conglomerate, followed by variegated marls and clays, with sandy clays and calcareous concretions. These beds are overlain by the representatives of the Infra Lias graduating upwards into a fine development of the Lower Lias exposed on the shore of Broadford Bay from Obe Breakish to the village of Broadford. The latter consist of black micaceous shales, with occasional limestone bands replete with fossils, such as *Ammonites Bucklandi*, *Gryphaea arcuata*, *Lima gigantea*, *Cardinia Listeri*, etc. The beds just described are overlain by similar black shales with occasional limestone bands, but presenting certain differences in their fossil contents. According to Professor Judd the most prominent feature is the absence of the typical *Ammonites Bucklandi*, and the abundance of other species, such as *A. semicostatus*. It is obvious that in this area the lithological characters of the Lower Lias do not quite correspond with those met with in England, but in districts of the West Highlands S of Skye this divergence is not so apparent. The representatives of the Middle Lias consist of dark sandy shales, with limestone nodules charged with *Ammonites armatus*, *A. Jamesoni*, *Belemnites elongatus*, graduating upwards into calcareous sandstones, the characteristic forms being *Ammonites spinatus*, *Belemnites elongatus*, etc. These beds occur at Strathaird between Loch Slapin and Loch Scavaig, on the S side of Portree Harbour, and also on the shore at Prince Charlie's Cave on the E coast. Next in order comes a thin series of beds representing the Upper Lias, consisting of finely laminated blue clays, with argillaceous nodules, iron pyrites, and some jet, averaging about 80 feet in thickness, yielding the following typical fossils: *Ammonites serpentinus*, *A. radians*, *A. communis*, *Posidonomya Browni*, etc. This horizon, which was first detected by Dr Bryce and Professor Tate, occurs in Strath, at Strathaird, and also at Prince Charlie's Cave N of Portree.

To these beds succeed an important group of strata of the age of the Lower Oolite, which attains a remarkable development in Skye. From the descriptions of Murchison, Bryce, Tate, and Judd, it would appear that the order of succession of the beds is obscured by numerous intrusive sheets of dolerite; but notwithstanding this fact they are divisible into the following zones: (a) at the base, sandy micaceous shales and sandstones, with bands of shelly limestone containing *Ammonites Murchisonae*, *A. corrugatus*, *Belemnites giganteus*, etc.; (b) shales and sandstones with large concretions, with occasional marine fossils; (c) probably an estuarine series consisting of white sandstones, with some shales containing much carbonaceous matter; (d) limestones made up of comminuted shells, resembling the horizon of the English Cornbrash or Forest Marble. Perhaps the best section of these strata is to be found in the cliff above Prince Charlie's Cave, but they may also be examined on the shore both N and S of Portree Bay. According to the researches of Professor Judd the Lower Oolite beds in Skye are succeeded by a great estuarine series consisting of massive white and grey sandstones, occasionally calcareous and conglomeratic, with wood and plant remains. These graduate upwards into shales and shelly limestones, with oysters and fibrous carbonate of lime, which are exposed on the shore at Loch Staffin on the E side of Trotternish, at Aird, Duntulm, at Stein in Loch Bay on the W coast, and also at Copnaw Head. Owing to the injection of igneous masses of Tertiary age the members of this series have undergone considerable alteration, the sandstones being converted into quartzite, the clays into Lydian stone, and the limestones into marble. Finally we have a considerable development of dark blue clays, with septarian nodules, which, from the nature of the fossils, undoubtedly belong to the horizon of the Oxford Clay, and form the highest beds of the Secondary formations in Skye. These strata, which occur at Loch Staffin, Duntulm, and in Uig Bay, have yielded the following characteristic forms: *Ammonites cordatus*, *A. Williamsoni*, *Belemnites*

sulcatus, *B. gracilis*, *Ostrea Roemeri*, etc. Professor Judd has shown that the remarkable features presented by the Storr Rocks and the Quiraing are due to the slipping of huge superincumbent masses of basalt over these plastic clays, and similar phenomena in the neighbourhood of Uig have been figured and described by Mr A. Ross, Inverness.

The great development of volcanic rocks in Skye forms one of the most striking geological features in the island. The serrated peaks of the Coolins, the smooth cone-shaped masses of the Red Mountains, the great basaltic plateaux in the N part of Skye, are due to the peculiar characters of the igneous rocks and their mode of weathering. The evidence in favour of the Tertiary age of these volcanic masses, and the theories which have been advanced to explain their physical relations, will be stated in the general article on the Geology of Scotland. At present it will be sufficient to indicate the character and distribution of the igneous rocks. They include (1) two distinct types of intrusive rocks, consisting of an acidic series and a basic series; (2) a remarkable development of contemporaneous volcanic rocks. Beginning first with the intrusive rocks, we find that the acidic series is represented by pink granite, syenite, and hornblende felsite, which form picturesque cone-shaped mountains between Loch Sligachan and Broadford. These masses are coarsely crystalline as a rule, save towards the outer limits, where they come in contact with the sedimentary strata through which they have been erupted. On the slopes of Ben Glamaig, E of Loch Sligachan, the mode of weathering of the Red Mountains may be studied with advantage. The crystalline constituents of the granite crumble away under the influence of atmospheric agencies, giving rise to a comparatively smooth or dome-shaped eminence. Far otherwise is it with the basic intrusive rocks so grandly developed in the Coolin Mountains round Loch Coruisk. Consisting of coarsely crystalline dolerite and gabbro of a dark grey tint, the masses weather with serrated peaks, owing to the presence of crystals of diallage and augite. Sometimes these crystals reach an unusual size, possessing a marked bronzy lustre, and where the felspars have been decomposed, they cause the rock to assume a peculiar jagged surface. The geologist who rambles round the shores of Loch Coruisk cannot fail to observe the striking contrast between the glaciated contour presented by the lower slopes of the mountains and the valleys on the one hand, and the jagged peaks of Blabheinn and the Coolins on the other. From the shores of Loch Sligachan and the Coolin Hills, N to the headlands of Trotternish, Vatarnish, and Dunvegan, there is one continuous succession of basaltic lavas preserving throughout this wide area a striking horizontality. The presence of thin seams of coal between the sheets of basalt, and the absence of sedimentary deposits, point to the conclusion that these volcanic ejectamenta were subaerial and not submarine. The terraced slopes of the hills, and the horizontal lines traceable along the cliffs, coupled with the slaggy characters of the upper and under surfaces of the flows, indicate the successive discharges of the igneous materials. But in addition to these great contemporaneous sheets of lava there is sufficient evidence to show that at a later date they were pierced by veins, dykes, and sheets of dolerite and basalt. The occurrence of numerous basalt dykes forms one of the characteristic features of the history of this period of volcanic activity. They are to be found in great numbers in the older rocks of Sleat, and they pierce all the Secondary formations as well as the volcanic plateaux. Usually they display a marked columnar arrangement at right angles to the walls of the dykes, and in the centre they are more coarsely crystalline than at the edges.

Soil and Agriculture.—The climate of Skye is very moist, but not more so than that of many places, such as Greenock and Fort William, on the mainland. The air is, however, almost constantly laden with vapour; and rain falls, though not always in large

quantities, on about 250 days throughout the year. The average rainfall is about 65 inches, but in exceptionally wet seasons it is sometimes over 100 inches. The prevailing winds are westerly or south-westerly, and being intercepted by the hills as they come from the Atlantic laden with vapour, clouds are formed, which sometimes break in useful and refreshing showers, but at other times burst like water spouts, deluging the lower grounds and injuring the crops. The mean annual temperature for the winter months is 40°, and for the rest of the year about 50°. In Kilmuir and Vaternish and round Loch Bracadale there is some fine clayey land, with a subsoil of rotten rock of different kinds, much of it limestone and volcanic deposits; and some haughs along the streams at several points are almost equally good. The rest of the arable land—the whole amount of which is but small—lies along the seaboard, and the soil is either light or peaty. The soil on the grazing lands is sometimes clayey, but it is mostly peaty; and, indeed, peat and stones ruin a considerable extent of land that might otherwise produce good returns, and thus a very large portion of the surface is, for economic purposes, practically almost valueless, and will, it is to be feared, always remain in that state, so great is the expense of draining and improving, and so uncertain the prospect of any return. The want of sunshine and the damp climate render harvest late, and the exposure to rain and to the stormy winds that set in about the end of August and the beginning of September does a great deal of damage to the ripe standing crops, the wind in some seasons completely threshing and destroying the grain just as it is ready to be cut. Much, even, of the pasture land is covered with heath and very coarse grass, with tracts of better herbage occurring here and there. Good land is estimated to be worth 10s. an acre, medium 6s., and poor about 2s. 6d. There is almost no land under wood except about Armidale Castle, Dunvegan Castle, and Skeabost. On Lord Macdonald's estate, a tract to the S of Loch Sligachan, extending to about 14,000 acres, is set apart as a deer forest—the only one in the island. The arable land is most extensive in Snizort, Bracadale, and Sleat, and the greater part of it is in the hands of crofters, a number of whom eke out their livelihood by temporary removal to the mainland where they work as labourers, and a still larger number have to trust largely to their wages as 'hired men' while engaged at the east coast herring fishing in June, July, and August. During the winter fishing is also carried on at home, but in this the men are greatly hindered by the want of adequate appliances and the lack of harbours; and it has also the bad effect of keeping the crofter by the sea-shore. He cannot afford to go inland and improve ground, as it would take him away from the source of a considerable portion of his winter means of living. This necessarily causes limitation in the number of the population that the island can maintain, and should this limit be exceeded, there must be a large amount of poverty and misery among the people. The only remedies seem to be enlarging the holdings so that each will maintain a family, and constructing harbours so that a race of fishermen pure and simple may subsist along the coast. The difficulty of getting the fish to market will to a great extent be overcome by the extension of the Dingwall and Skye branch of the Highland railway from Strome Ferry to Kyle Akin Strait, and perhaps much more by the extension of the West Highland railway from Fort William to Mallaig at the entrance to Loch Nevis in the Sound of Sleat. By the latter railway the produce of Skye may be sent direct to the Glasgow and southern markets. The Strome Ferry extension was begun in 1893, and the Fort William extension was sanctioned in 1894, when the line was opened to that place from the Clyde. (See HIGHLAND RAILWAY and WEST HIGHLAND RAILWAY.) The crops grown on the larger holdings are oats, potatoes, and turnips, but on the smaller ones only oats and potatoes. The grain crop yields a return of only about 3 to 3½ times the seed, and in this respect things must be very much

worse than in 1549, when Dean Monro describes the island as 'fertill land, namelie for aitis, excelling aney uther ground for grassing and pastoures;' and Martin, writing in 1703, says, 'The soil is very grateful to the husbandman. I have been shown several places that had not been tilled for seven years before, which yielded a good product of oats by digging, though the ground was not dunged, particularly near the village Kilmartin, which the natives told me had not been dunged these forty years last. Several pieces of ground yield twenty, and some thirty fold when dunged with sea-ware. I had an account that a small tract of ground in the village Skerrybreck yielded an hundred-fold of barley.' What he says about the fallow and the manuring is, however, suggestive, and it is hardly to be wondered that the power of the soil should have become exhausted under the constant cropping that it has undergone, oats and potatoes alternating year after year, or one crop of potatoes being taken to two of grain, while little or no manure was applied, except some poor compost or exhausting sea-weed. Lime is worked both at Broadford and in Vaternish, but it is not of a quality very suitable for agricultural use, and most of what is so employed is brought from the N of Ireland. The soil seems to suit turnips, and where they are grown the return in an average season is from 16 to 20 tons, and potatoes yield about 5 tons, but they generally suffer much from disease. The cattle are of the black West Highland breed, and the sheep are Cheviots and blackfaced, mostly the former. The cattle are generally disposed of at the markets held at Broadford in May, August, and September, at Portree in May and August, and at Sligachan in August and September. A graphic picture of market day at Broadford is given in Alexander Smith's *Summer in Skye*. The sheep are sold at Inverness, Muir of Ord, and Falkirk markets, and the wool mostly on commission in Glasgow and Leith, though a considerable quantity goes also to the woollen manufactory at PORTREE,—the making of tweeds, plaids, etc., there carried on, being the only manufacture in the island.

The making of kelp, once so extensively prosecuted, is now practically extinct. The magnitude of this industry and the causes of its decline have been already noticed in the article on the HEBRIDES, and its importance in Skye may be gathered from the estimate formed, that in some years prior to 1830 Lord Macdonald's annual gross income from this source was over £20,000, of which at least £9000 would be paid in wages to the people employed in the manufactory. Skye is combined with Loch Carron to form one of the fishery districts of Scotland, and the number of first-class boats belonging to this in 1893 was 29; of second-class boats, 366; of third-class boats, 553; but of these probably not one-third belonged to Skye itself. The number of fishermen and boys employed in 1893 was 2365; and of other persons, 887; and the value of the boats was £7526, of the nets £22,112, and of the lines £2666. The total number of barrels of herring salted or cured in the district was 38,187, and the number of cod, ling, and hake taken was 23,782. Through the aid of a loan from Lord Macdonald a stone pier 700 feet long was erected by the Fishery Board at BROADFORD in 1892 at a cost of £10,000. The lighthouses of Skye, beginning on the NE, are, South Rona, Ayre Point (Raasay), Portree, Broadford Bay, Kyle Rhea, Isle Ornsay, Ughinish Point (Loch Dunvegan), and Uig (Loch Snizort).

The crofter communities have their houses in each district close together on their patches of arable land, the group so formed constituting a township. The houses are very miserable structures, generally consisting of two rooms of which the outer is the byre. The walls, formed of rough masses of unhewn stone, are some 5 or 6 feet thick, and about the same height, the middle portion being sometimes filled up with heather or turf; and the corners are rounded off. The thatch roof is secured against wind by a network of straw or heather ropes, held down at the ends by large blocks of stone. There is often no window, or if there be one it is merely

a single pane of glass inserted in the thatch or in a turf-packed hole in the wall prepared for its reception. The island being practically destitute of wood, the rafters are valuable possessions, and many were the complaints before the Crofters' Commission as to non-compensation for these precious pieces of timber. The peat fire is on a stone or stones in the middle of the clay floor, and as there is either no chimney or merely a hole in the roof to serve for that purpose, the smoke either lingers all over the place, sinking into the thatch overhead and forming with it a sooty compound that will by and by become valuable as dressing for the cultivated land, or finds its way out at the half open door as best it can. The people are in no way different from those of the Hebrides generally, and the remarks made in the article on the whole group as to their present condition, and the changes that have taken place during the past century, are equally applicable here.

Skye and the adjacent smaller islands form a judicial division of Inverness-shire, with a resident sheriff-substitute, and Portree as the seat of the sheriff-court. It is divided into the 7 *quoad civilia* parishes of Kilmuir, Snizort, Duirinish, Bracadale, Portree, Strath, and Sleat, which include also the *quoad sacra* parishes of Halin-in-Vaternish and Stenschoil, in the articles dealing with which, or in separate notices, all the chief points of interest will be found more particularly described. The seven civil parishes form a poor-law combination with a poorhouse near Portree containing accommodation for 75 inmates. Portree, with a population of 1003 in 1891, is the only place that can be called a town; the villages are Broadford, Kyle-Akin, Isle-Ornsay, and Uig; and there are a considerable number of townships scattered round the coast. There is communication with the mainland by means of ferries at Kyle-Akin and at the S end of Kyle Rhea; and by steamers from Glasgow, Oban, and Strone Ferry, as is noticed under PORTREE. Good main lines of road traverse the coasts of the island on both sides except between Staffin Bay and Portree, at the W side of Sleat, at Minginish, and at Duirinish, but the district roads are few and mostly poor. Pop. (1821) 20,627, (1841) 23,082, (1861) 18,908, (1871) 17,320, (1881) 16,889, (1891) 15,705, of whom 8351 were females and 14,439 Gaelic-speaking.

The Established Church has a presbytery of Skye in the synod of Glenelg. It embraces all the Skye parishes already mentioned, as well as the parish of SMALL ISLES, and mission stations at Braes, Kyle-Akin, Kilmaluag, Uig, and Breakish. The Free Church has also a presbytery of Skye embracing the charges at Bracadale, Duirinish, Kilmuir, Portree, Raasay, Sleat, Snizort, and Strath, and preaching stations at Arnizort and Small Isles. The only other places of worship in the island are a U.P. church at Portree, a Baptist church at Broadford, and Episcopal churches at Caroy, Edenbane, and Portree.

See also Martin's *Description of the Western Islands of Scotland* (1703; reprint, Glasg. 1884); Dr Johnson's *Journey to the Western Islands of Scotland* (1776); Boswell's *Tour to the Hebrides* (1785); Gregory's *History of the Western Highlands and Isles of Scotland* (Edinb. 1836; 2d ed., Glasg. 1881); Macculloch's *Description of the Western Islands of Scotland* (1819), and his *Highlands and Western Isles of Scotland* (1824); Alexander Smith's *Summer in Skye* (Edinb. 1865); Buchanan's *The Hebrid Isles* (1883); the appendix to the *Report of the Royal Commission on Agriculture* (1881); and the *Report of the Crofters' Commission* (1884).

Skyreburn. See ANWOTH.

Slaim, Loch. See BORGIE and CRAGGIE.

Slains, a coast parish of Buchan, E Aberdeenshire, containing the fishing-village of COLLESTON, 6 miles E by S of Ellon, under which it has a post office. It comprises the ancient parish of Forvie; in outline resembles a triangle, with south-south-westward apex; and is bounded N by Cruden, SE by the German Ocean, and W by Foveran and Logie-Buchan. Its utmost length, from N by E to S by W, is 7 miles; its utmost width is 4½ miles; and its area is 9124 acres. The

Burn of Forvie flows 4½ miles south-by-westward along the western border to the tidal YTHAN, which, with a high-water breadth here of from 1 furlong to ½ mile, winds 2½ miles south-by-eastward to its mouth in the German Ocean along all the rest of the Logie-Buchan and Foveran boundary. At Waterside of Slains it is crossed by a bridge, erected in 1876 at a cost of £4000. The coast-line, 6½ miles in extent, has a general south-south-westerly trend, and S of Hackley Head is fringed by the Sands of Forvie, a desert of links between the sea and the Ythan, rolled into knolls and little peaks, and scantily covered with bent. Tradition differs as to the date when Forvie was overwhelmed by sand, one account referring it to the middle of the 15th century, another to the reign of James VII.; but both concur in ascribing the calamity to a furious nine days' easterly gale. Northward the coast grows rocky and precipitous, attaining 100 feet at Hackley Head, 131 near the parish church, 193 near Oldecastle, and 122 at Bruce's Haven. The cliffs are indented by numbers of little creeks, are torn and piled in terrible confusion, exhibit deep ghastly chasms, and are pierced profoundly with numerous caverns. One of the caves, Hell's Lum, is upwards of 200 feet long, and in places 30 feet high; another, the Dropping Cave or White Cave of Slains, is so richly incrustured with stalactites, and profusely watered with the calcareous drippings from a porous rock which forms them, that though the whole was swept away for transmutation into manure, a new coating, similar in appearance to carved white marble, was very rapidly formed. In the old smuggling days so well described in John Skelton's *Crookit Meg* (1880), these caves were great contraband storehouses; and a spot near the church was the scene of a desperate fray, in which Philip Kenney was slain by a revenue officer, 19 Dec. 1798. A round hill of solid rock near the manse is pierced by the 'Needle's Eye,' a fissure 30 yards long, 4 feet wide, and 20 to 30 feet high, through which, in an easterly gale, the waves rush with terrific violence. In a neighbouring creek, St Catherine's Dub, the 'St Catherine,' one of the Spanish Armada, was wrecked in 1588; and a cast-iron gun was raised here in 1856. Along the western border the surface declines to less than 50 feet above sea-level; but elsewhere the interior is high though hardly hilly, attaining 264 feet near the northern boundary and 216 at the Kippit Hills on the northern shore of the MUCKLE LOCH (4×2½ furl., 134 feet). This, lying towards the centre of the parish, is much the largest of four small fresh-water lakes, the others being Little, Cotehill, and Sand Lochs. Gneiss and mica slate are the chief rocks of the cliffs; gravel and small limestone boulders form the Kippit Hills; and a caustic calcareous sand, suitable to be spread over newly reclaimed clay land, and long used in a general way as a manure, prevails over much of the sandy waste. The soil is of every variety, from the lightest sand to the heaviest clay. A great extent of land, formerly waste, has been reclaimed, and more than 7000 acres are now under the plough. On Brownhill farm the late Mr Gordon of Cluny introduced the steam plough into Aberdeenshire, 24 April 1872. Only at Pitlurg are there any trees, and they have a stunted appearance. The chief antiquity is the ruin of Slains Castle, crowning a steep peninsulated rock, 120 feet high, whose base is washed by the sea. This castle was very extensive and of great strength, the only approach to it being a narrow defile which a handful of brave men could have held against any force; but a fishing village, with about 80 inhabitants, now occupies most of its site. From the early part of the 14th century it was the stronghold of the Hays of Errol, but was demolished in 1594 by James VI., on occasion of the eighth Earl of Errol having joined in the Earl of Huntly's rebellion. The foundation of the old church of Forvie may still be traced on the Links; and 3 furlongs SSE of Pitlurg is the ivied gable of St Adamnan's Chapel, with a Gothic window nearly entire. William Robinson Pirie, D.D. (1804-85), Principal of Aberdeen University, was born at the manse. Pitlurg House, 6 miles ENE of Ellon and 3½

SLAINS CASTLE

N by W of Collieston, was built in 1828, and belongs to Alexander Gordon-Cumming-Skene, Esq. of PARKHILL. Slains is in the presbytery of Ellon and the synod of Aberdeen; the living is worth £266. The parish church, $\frac{1}{2}$ mile N by E of Collieston, was built in 1806, and contains 654 sittings. It was thoroughly repaired and renovated in 1882; and a new manse was built in 1876. There is also a Free church; and three schools—Collieston public, Slains public, and the endowed Bruce-Hay girls'—with respective accommodation for 50, 100, and 72 children, had (1893) an average attendance of 50, 63, and 67, and grants of £41, 13s., £72, 18s. 6d., and £63, 5s. 6d. Pop. (1801) 970, (1831) 1134, (1861) 1266, (1871) 1355, (1881) 1256, (1891) 1279, of whom 419 were in Collieston.—*Ord. Sur.*, shs. 87, 77, 1876-73.

Slains Castle, the seat of the Earl of Erroll, in Cruden parish, Aberdeenshire, on the brink of a lofty sea-cliff, $\frac{1}{2}$ mile SSW of the Bulters of Buchan, 5 miles NNE of Old Slains Castle, and 7 SSW of Peterhead. Built in 1664, and much extended at several periods, it was, with exception of the lower part of its original tower and of two other small portions, rebuilt in 1836-37; and now is a stately and commodious edifice. Dr Johnson, who was here in 1773, described it as 'built upon the margin of the sea so that the walls of one of the towers seem only a continuation of a perpendicular rock, the foot of which is beaten by the waves. To walk round the house seemed (and is) impracticable. From the windows the eye wanders over the sea that separates Scotland from Norway, and when the winds beat with violence, must enjoy all the terrific grandeur of the tempestuous ocean. I would not, for my amusement, wish for a storm; but as storms, whether wished for or not, will happen, I may say, without violation of humanity, that I should willingly look out upon them from Slains Castle.' In 1894 a vessel was wrecked at this spot. Charles Gore Hay, twenty-third Hereditary Lord High Constable of Scotland since 1815, and nineteenth Earl of Erroll since 1452 (b. 1852; suc. 1891) is present proprietor.—*Ord. Sur.*, sh. 87, 1876. See LUNCARTY and ERROLL.

Slamannan, a village and a parish of SE Stirlingshire. The village stands near the right bank of the Avon, $5\frac{1}{2}$ miles SSW of Falkirk and 5 furlongs N by W of Slamannan station on the Slamannan section (1840) of the North British railway, this being $4\frac{1}{2}$ miles W by S of Blackston Junction, $9\frac{1}{2}$ ENE of Coatbridge, and $17\frac{1}{2}$ ENE of Glasgow. It has a post office, with money order, savings bank, and telegraph departments, a branch of the Bank of Scotland, one or two hotels, and a gaswork. Pop. of village, (1861) 482, (1881) 1644, (1891) 1812, of whom 381 were in Blinkbonny.

The parish contains also the village of AVONBRIDGE and the conjoint villages of Balquhatston Row and Arnloss Colliery, of Binniehill and Southfield, of Limerigg and Lochside. It is bounded N by Falkirk and Muiravonside, SE by Torphichen in Linlithgowshire, and SW by New Monkland in Lanarkshire. Its utmost length, from E to W, is 6 miles; its utmost breadth, from N to S, is $3\frac{1}{2}$ miles; and its area is 7148 acres, of which $86\frac{1}{2}$ are water. The river Avon or AVEN winds 8 miles east-by-northward and east-by-southward along all the Falkirk and Muiravonside boundary; and Polness or Druntassie Burn runs $4\frac{1}{2}$ miles north-eastward along nearly all the Torphichen boundary, till it falls into the Avon at the eastern extremity of the parish. Triangular BLACK LOCH ($\frac{1}{2} \times \frac{1}{2}$ furl.) lies just on the New Monkland border; and 5 furlongs ENE is Little Black Loch ($1\frac{1}{2} \times 1$ furl.). The surface is flatfish, sinking along the Avon to a little less than 500 feet above sea-level, and attaining a summit altitude of 707 feet near the Little Black Loch. The lands adjacent to the Avon, to the breadth of about a mile, comprise haugh and meadow, and are subject to floods after heavy rains. The rocks are mainly carboniferous, and include great quantities of excellent coal and ironstone. The parish abounds in collieries. Mining consequently employs a large proportion of the population, and the manufacture of coke is extensively carried on. There is also a woollen manu-

SLATE ISLANDS

factory at Avonbridge. The soil of the haugh and the meadow lands is light and fertile; and that of the higher tracts is partly a good loam, partly strong hard clay, partly black mossy earth, and partly moor or wet moss overlying a bed of sand. Much ground, formerly heathy or swampy, has been reclaimed into good arable condition. Part, or perhaps the whole, of the parish was obtained in 1470 from James II. by Lord Livingstone; and, along with the advowson of the church, was held by his lordship's successors, the Earls of Linlithgow and Calendar, till their attainder in 1716. The parish in pre-Reformation times was called St Laurence—on account of the dedication of its church to this saint; and, in legal instruments, it is still designated 'the parish of Slamannan, otherwise St Laurence.' An excellent fountain, a little SE of the church, bears the name of St Laurence's Well. A mansion, noticed separately, is BALQUHATSTON. Since 1730 the southern portion of Falkirk parish has been annexed ecclesiastically to Slamannan, which is in the presbytery of Linlithgow and the synod of Lothian and Tweeddale. The living is worth £304. The parish church was built in 1810, and contains some 700 sittings. In 1892 it was improved interiorly. A mission church (iron) was opened at Limerigg in 1886. There are also Free and Methodist churches, besides an Evangelical Union church at Avonbridge, and a Roman Catholic church (St Mary's) at Slamannan (1885) with 300 sittings. Four schools—Avonbridge public, Limerigg public, Slamannan public, and Slamannan Free Church—with respective accommodation for 150, 332, 613, and 146 children, had (1893) an average attendance of 112, 313, 573, and 123, and grants of £112, 0s. 6d., £310, 18s., £566, 10s., and £112. There is a Roman Catholic school at Barnsmuir, with accommodation for 132 children. Pop. of civil parish (1801) 923, (1841) 979, (1861) 2916, (1871) 4164, (1881) 5850, (1891) 6731; of ecclesiastical parish (1871) 4847, (1881) 6428, (1891) 7221.—*Ord. Sur.*, sh. 81, 1867.

Slapin, a sea-loch on the S side of Strath parish, Isle of Skye, Inverness-shire, striking at right angles from the mouth of Loch Eishort, and penetrating $4\frac{1}{2}$ miles north-by-westward to within 3 miles of the head of Loch Eynort, on the opposite side of the island. Across the entrance it measures $2\frac{1}{2}$ miles, and thence narrows gradually to a point. It goes parallel with Loch Scavaig, and, in common with that sea-loch, is sublimely overhung by Blabhair or Blaven (3042 feet).

Slate. See SLEAT.

Slateford, a village in Colinton and St Cuthberts parishes, Edinburghshire, on the Water of Leith and the Union Canal, $\frac{1}{2}$ mile SSW of Slateford station on the Caledonian railway, this being $2\frac{1}{2}$ miles SW of the Edinburgh terminus. It has a post office, with money order, savings bank, and telegraph departments, a bridge, a canal aqueduct, a railway viaduct, the parish church (rebuilt 1889-90), an old U.P. church, a public school, a police station, and the extensive bleachfield of Inglis Green. The Rev. John Dick, D.D. (1764-1833), afterwards professor of theology to the Associate Synod, was minister here from 1786 to 1803; and Robert Pollok (1799-1827), author of the *Course of Time*, spent the last summer of his life with Dr Dick's successor, the Rev. John Belfrage, M.D., and preached once or twice in his church. The aqueduct and the viaduct are magnificent works, the former 500 feet long and 65 high; and they and the bridge stand so near one another, and have such different heights, as to form a curious scene. Pop. (1841) 221, (1861) 514, (1871) 647, (1881) 621, (1891) 622, of whom 521 were in Colinton parish.—*Ord. Sur.*, sh. 32, 1857.

Slateford, a small village in Maybole parish, Ayrshire, $1\frac{1}{2}$ mile N by E of the town.

Slateford, Forfarshire. See EDZELL.

Slate Islands, a group of islands off the mainland of Lorn district, Argyllshire. It commences $7\frac{1}{2}$ miles SSW of Oban, and terminates $4\frac{1}{2}$ miles N by W of Craignish Point; measures about 10 miles in length from N to S, and about $3\frac{1}{2}$ miles in breadth; is separated

from the mainland, and intersected in its several parts, by narrow straits; takes its name from consisting largely of fissile clay slate, well adapted for roofing purposes; and exhibits, throughout shores and surfaces, such mixtures of rock and wood, of height and hollow, as form an assemblage of charming close views. Its chief islands are Luing, Shuna, Torsay, Seil, Easdale, and Balnahaigh, all of which are separately described.

Sleat, a parish in the SE of the Isle of Skye, containing the coast village of ISLE-ORNSAY, and including the island of Ornsay, 11 miles SSE of Broadford, under which it has a post office, with money order, savings bank, and telegraph departments. It is bounded at its north-eastern extremity by Loch Alsh and by KYLE RHEA ($\frac{3}{4}$ mile broad), along all its south-eastern side by the Sound of Sleat, and along its western and north-western by the Atlantic, Loch Eishort, and Strath parish. Its utmost length, from NE to SW, is $2\frac{1}{4}$ miles; and its utmost breadth is $\frac{5}{8}$ miles. Prior to 1891 the parish had a detached part situated at Kyle-Rhea. The Boundary Commissioners, however, in that year effected an exchange of territory between this parish and that of Strath. The northern portion of the detached part of Sleat was given to Strath, while at the same time a portion of Strath was given to Sleat, so as to connect the remainder of the detached part of Sleat with the main portion of the parish. Loch na Dal indents it on the NE side to a depth of $1\frac{1}{2}$ mile, and leaves an isthmus only $1\frac{1}{2}$ mile broad to the head of Loch Eishort on the opposite side. It thus cuts the parish into two natural divisions, of which the north-eastern, measuring $7\frac{7}{8}$ miles in extreme length and $2\frac{1}{4}$ in extreme breadth, is separated from Strath or the rest of Skye by a lofty hill range. The road from Broadford to Kyle Rhea crosses this range by the pass of Bealach Udal, 911 feet high, and to the NE of that pass rise Sgurr na Coinnich (2401 feet) and Beinn na Caillich (2396); to the SW, Ben Alask (1984), Beinn na Seamraig (1839), and Beinn Bhreac (1427). The south-western division forms a peninsula between the Sound of Sleat and Loch Eishort, and measures $13\frac{1}{2}$ miles in extreme length by $\frac{5}{8}$ in extreme breadth. It tapers to a headland, the Point of Sleat, 242 feet high; and elsewhere the coast is generally steep and rocky. The interior is hilly, but hardly mountainous, chief summits from NE to SW being Sgorach Breac (977 feet), Sgurr na h-Iolair (956), and Sgurr nan Caorach (918). Loch nan Uamh (67 acres) and Loch Dughail (50 $\frac{1}{2}$ acres) are the largest of fourteen moorland lochs, which sometimes afford fair sport to the fisherman, and which send off a number of streams to the sea. The rocks are mainly metamorphic, but they exhibit great variety, and include quartzite, gneiss, clay slate, limestone, sandstone, etc. The soil of much of the arable land on the SE side is a deep and not unproductive clay. With its larch plantations and trim hedgerows, the long promontory of Sleat has been termed 'the best wooded, the sunniest, and the most carefully cultivated part of Skye;' still less than one-fourth of the entire area is arable, green pasture, or woodland. DUNSCAITH and KNOCK CASTLE, the chief antiquities, are noticed separately, as also is modern ARMADALE CASTLE, whose owner, Lord Macdonald, is sole proprietor. Sleat is in the presbytery of Skye and the synod of Glenelg; the living is worth £170. The parish church, at Kilmore, 6 miles SSW of Isle-Ornsay, is a good Gothic building of 1877, and contains 600 sittings. There is also a Free church; and seven public schools—Aird, Ardvaser, Drumfern, Duissdale, Ferrindonald, Kyle-Rhea, and Tarscabhaig—with respective accommodation for 68, 51, 30, 116, 90, 27, and 80 children, had (1898) an average attendance of 49, 48,—, 49, 23, 18, and 40, and grants of £62, 8s. 6d., £66, 18s., £—, £53, 8s., £20, 2s., £35, 18s. 6d., and £53, 4s. 6d. Pop. (1801) 1903, (1881) 2957, (1861) 2330, (1871) 2233, (1881) 2060, (1891) 1843, of whom 1658 were Gaelic-speaking.

Sleat, Sound of, a belt of sea dividing the SE shore of the Isle of Skye from the Glenelg, Knoydart, and Morar districts of the mainland of Inverness-shire. In

the N communicating by KYLE RHEA with Loch Alsh, it extends $19\frac{1}{2}$ miles south-south-westward; broadens from 1 mile to 7 miles; sends off, on its mainland side, Lochs Hourm and Nevis; on its Skye side contains the harbour of Isle-Ornsay; and is regularly traversed by steamers plying between Oban and the Clyde to the S and Portree and Wester Ross to the N. On Isle Ornsay there is a lighthouse, giving a fixed white light, erected in 1857. On the mainland side, at the entrance to Loch Nevis, stands MALLAIG, the terminus of the proposed extension of the West Highland railway.

Sliach. See DRUMBLADE.

Sligachan, a place, with a good inn, in the Isle of Skye, Inverness-shire, at the head of salt-water Loch Sligachan, 9 miles S by E of Portree and $15\frac{1}{2}$ WNW of Broadford, under which it has a post and telegraph office. See GLENESLIGACHAN and PORTREE.

Slipperfield Loch. See LINTON, Peeblesshire.

Slitrig Water, a troutful rivulet of Teviotdale, Roxburghshire, formed by several head-streams which rise on the northern slope of the watershed with Liddesdale, and running through or along the borders of Cavers, Kirkton, and Hawick parishes till it falls into the Teviot at the town of Hawick. Its descent is very great, and its current in consequence rapid. Over a great part of its course it has a rocky path, occasionally it careers down a shelving descent, and at one place it forms a picturesque cataract. Its vale, though gorge-like, and screened by bold green heights, repeatedly expands into little haughs, and is pleasantly tufted with wood; and, so far up as 4 miles above Hawick, is spread out into the rich and beautiful demesne of Stobs Castle. The stream, as a whole, is charmingly picturesque. Dr Leyden, one of several who have celebrated it in verse, seems to have objected to the harshness of its name, and capriciously gives it the soft designation of 'Slata.'—*Ord. Sur.*, sh. 17, 1864.

Sloy, Loch. See ARROCHAR.

Smaddy, Loch. See CROSSMICHAEL.

Smailholm, a village and a parish of N Roxburghshire. An ancient straggling place, the village is $\frac{5}{8}$ miles S by E of Gordon station and 6 WNW of Kelso, under which it has a post office.

The parish is bounded SE by Kelso and Makerstoun, and on all other sides by Berwickshire, viz. SW and W by Mertoun, N by Earlston and Nenthorn, and NE by Nenthorn. Its utmost length, from E to W, is 4 miles; its utmost breadth is $\frac{2}{3}$ miles; and its area is 4202 acres, of which $\frac{7}{8}$ are water. Troutful EDEN WATER winds 3 miles east-by-southward along the eastern part of the northern boundary; and beside it, in the north-eastern corner of the parish, the surface sinks to 298 feet above sea-level, thence rising to 570 feet near Overton, 658 near New Smailholm, and 680 at Sandyknowe Crags. Trap rock, 'rotten rock,' and limestone are plentiful; and the two first furnish very fair road metal. Some 65 acres are under wood; about one-ninth of the entire area is natural pasture; and all the remainder is in tillage. Sandyknowe, a comfortable and substantial farm, $1\frac{1}{2}$ mile SSW of the village and 6 miles W by N of Kelso, was the frequent home, from his third till his eighth year, of Sir Walter Scott (1771-1832), whose paternal grandfather, Robert Scott, held a lease of it from his chief and kinsman, Mr Scott of Harden. Behind, on Sandyknowe Crags, 'standing stark and upright as a warder, is the stout old Smailholm Tower, seen and seeing all around. It now is more than a hundred years since that "lonely infant" was found in a thunderstorm, lying on the soft grass at the foot of the grey old Strength, clapping his hands at each flash and shouting, "Bonny! bonny!"' Thus wrote the author of *Rob and his Friends*; and Scott himself, in the Introduction to Canto Third of *Marmion*, has sung—

‘Those crags, that mountain tower,
Which charmed my fancy’s wakening hour:
Though no broad river swept along,
To claim, perchance, heroic song;
Though sighed no groves in summer gale,
To prompt of love a softer tale;

Though scarce a puny streamlet's speed
Claimed homage from a shepherd's reed,
Yet was poetic impulse given
By the green hill and clear blue heaven.
It was a barren scene, and wild,
Where naked cliffs were rudely piled;
But ever and anon between
Lay velvet tufts of loveliest green;
And well the lonely infant knew
Recesses where the half-flower grew,
And honey-suckle loved to crawl
Up the low crag and ruined wall.
I deemed such nooks the sweetest shade
The sun in all his round surveyed;
And still I thought that shattered tower
The mightiest work of human power.'

In the *Yec of St John*, too, almost his earliest ballad, the scene is laid at Smaylholme or Smailholm Tower, which later formed his prototype of 'Avenel Castle.' Built in the early part of the 15th century, it is a plain square gabled tower of the usual Border type three storeys high, with massive walls 9 feet thick, small windows, vaulted stone roofs, and a narrow stone turnpike stair at the SE angle. On three sides are crags, on the fourth or eastern a morass and a deep brown lochlet, the remains of a larger lake that once surrounded the height. A strong outer wall, now very ruinous, enclosed a courtyard, within which stood the domestic chapel. From the top is gained a magnificent view to Berwick, the Cheviots, 'triple Eildon,' and the Lammermuirs; and at such a distance is the tower visible that in old topographical works it figures as 'a conspicuous landmark to direct vessels to Berwick.' The lands of Smailholm were held by the Pringles from 1408 until the first quarter of the 17th century, when they went to the Scotts of HARDEN, so that their present owner is Lord Polwarth. The Earl of Haddington is chief proprietor in the eastern half of the parish. Smailholm is in the presbytery of Earlstoun and the synod of Merse and Teviotdale; the living is worth £326. The ivy-mantled church, supposed to have been built in 1632, contains 282 sittings. The public school, with accommodation for 112 children, had (1893) an average attendance of 81, and a grant of £83, 14s. 6d. Pop. (1801) 446, (1831) 628, (1861) 554, (1871) 534, (1881) 446, (1891) 340.—*Ord. Sur.*, sh. 25, 1865.

Small or Sma' Glen. See GLENALMOND.

Smallholm. See LOCHMADEN.

Small Isles, a Hebridean parish of Inverness-shire, detached from Sleat parish in 1726, and successively known as Eigg, Short Isles, and Small Isles. Prior to 1891 the parish was partly also in Argyllshire, but in that year the Boundary Commissioners placed it entirely in Inverness-shire. It comprises nine islands—Canna, containing 2908 acres; Sanday, 577; Rum, 26,785; Muck, 1585; Oigh-sgeir, 76; Eilean nan Each, 97; a small island of 8 acres (these were in Argyllshire); Eigg, 7803; and Eilean Chasgaidh, 102. Its total area is 62 square miles or 39,941 acres, of which 2008 are foreshore and 184 water. The post-town is Oban. Small Isles parish is in the presbytery of Skye and the synod of Glenelg; the living is worth £180. Two public schools, Canna and Eigg, with respective accommodation for 22 and 60 children, had (1893) an average attendance of 11 and 35, and grants of £25, 16s. 6d. and £61, 12s. There is a third public school, at Rum, with accommodation for 31 children. Pop. (1861) 567, (1881) 550, (1891) 436, of whom 374 were Gaelic-speaking.

Smeaton, a mansion of 1790, in Prestonkirk parish, Haddingtonshire, $\frac{1}{2}$ mile N of East Linton. It is interesting as containing several relics of Mary Queen of Scots—viz., an autograph letter, an altar cloth of her embroidering, a comb, a black satin body, etc. In 1538 Sir Patrick Hepburn of Wauchton gave half the lands of Smeaton and all Smeaton-Crux to his second son, Adam, whose last male descendant was succeeded in 1764 by his nephew, George Buchan of Letham. He was created a baronet in 1815; and his great-grandson, Sir Arch. Buchan Hepburn, fourth Bart. (b. 1852; suc. 1893) is present proprietor.—*Ord. Sur.*, sh. 33, 1863. See J. Small's *Castles and Mansions of the Lothians* (Edinb. 1838).

Smeaton, a railway station on the S border of Inveresk parish, Edinburghshire, on the Macmerry branch of the North British railway, 4 miles SE of Portobello.

Smithston. See GREENOCK.

Smithstone, an estate, with a mansion, in Tarbolton parish, Ayrshire, $\frac{1}{2}$ mile WSW of Mauchline.

Smithton, a village in Cumbernauld parish, in the detached section of Dumbartonshire, near the Edinburgh and Glasgow railway, $2\frac{1}{2}$ miles WSW of Cumbernauld town. Pop. (1871) 446, (1881) 420, (1891) 320.

Smoo Cave, a limestone cavern, with three compartments, in Durness parish, Sutherland, at the head of a small sea-inlet $\frac{1}{2}$ mile E of Durness church. Its entrance is 53 feet high, and resembles a Gothic arch with high entablature and spreading pillars; its first compartment is 200 feet long and 110 wide, and has a vaulted roof with vertical aperture to the open air; its second compartment is 70 feet long and 30 wide, has also a high arched roof with vertical aperture, contains a deep pool, and receives a waterfall of 80 feet in leap; and the third compartment is 120 feet long, 8 wide, and from 12 to 40 high, and cannot be seen without an artificial light. A small harbour, adjacent to the cavern, serves only for boats.—*Ord. Sur.*, sh. 114, 1880.

Smyllum. See LANARK.

Snaigow, a modern English Baronial mansion in Caputh parish, Perthshire, 4 miles E by N of Dunkeld. The estate was purchased in 1874, and has since been greatly improved, by William Cox, Esq., a partner in the great LOOCHIE firm.—*Ord. Sur.*, sh. 43, 1868.

Snar Water. See CRAWFORDJOHN.

Snizort, a parish in the N of Skye, Inverness-shire, whose church stands towards the head of Loch Snizort Beag, $6\frac{1}{2}$ miles NNW of Portree, under which there is a post office of Snizort. Containing also the post office villages of Skeabost and Uig, it is bounded N by Kilmuir, E by the Sound of Raasay, SE by Portree, SW by Bracadale, and W by Duirinish and Loch Snizort. Its utmost length, from N to S, is 15 miles; its utmost width, from E to W, is $3\frac{1}{2}$ miles; and its area is $84\frac{1}{2}$ square miles or 54,285 $\frac{1}{2}$ acres, of which 7894 are foreshore, 1774 water, and 384 tidal water. The E coast measures $5\frac{1}{2}$ miles, and the W coast no less than 23, following all the ins and outs of Uig Bay and Loch Snizort Beag; and both are generally bold and rocky. Loch Leathan (7×4 furl.; 436 feet), on the Portree boundary, is much the largest of four fresh-water lakes; and the principal streams are the Snizort, the Haultin, the Romesdal, the Hinnsidal, and the Conon, all running to Loch Snizort Beag or Loch Snizort. The surface is everywhere hilly or mountainous, chief elevations from N to S being Bìodha Buidhe (1523 feet), Beinn Edra (2003), Beca Ruadh (2091), the Storr (2360), Beinn a Chearcaill (1817), and Beinn Grasco (768). Of these the huge and lofty ridge that bears the name of the Storr sends up a chief cluster of torn and precipitous summits, which, rising to a height of several hundred feet above the adjacent masses, shoot up from the bosom of a fog like a series of air-borne spires, towers, and walls—a far-away city on the clouds. Much of the parish is irreclaimable waste, 47,439 acres being ranked as moorland by the Ordnance Survey; but much of this moorland is occupied in the rearing of black cattle. The rocks are principally traps, partly overlying stratified formations; and the soil of the arable grounds, though various, is chiefly a gravelly loam on a cold clay. On an islet formed by the river Snizort, and now used as a cemetery, are the ruins of an old cruciform church, which probably was once the parent church of Skye. In various localities are cairns, tumuli, and vestiges of stone circles. The Old Man of Storr is a natural obelisk of uncommon magnitude, measuring 360 feet around the base, swelling below the middle to a larger girth, and thence tapering away to nearly a sharp point at an altitude of 160 feet. On the boundary with Portree is a beautiful cascade over a precipice about 90 feet high. Beneath it, and nearly opposite its middle, an arched hollow path passes across the rock, so broad that five or six persons may occupy it abreast, and so

situated that they are secure from the body of water which rolls over them, and looks like a thick curved pillar of smoke. Kingsburgh House, near the E shore of Loch Snizort Beag, $2\frac{3}{4}$ miles NNW of the parish church, is gone; but some venerable plane trees mark the site of its garden. Hither, disguised as 'Betty Burke,' Miss Flora Macdonald's Irish maid, came Prince Charles Edward, on 28 June 1746; here he made a hearty supper, drank a bumper of brandy, smoked a pipe, and enjoyed, for the first time for many weeks, the luxury of a good bed. Hither, too, in 1773, came Dr Johnson. Lord Macdonald is chief proprietor. Snizort is in the presbytery of Skye and the synod of Glenelg; the living is worth £170. The parish church, built in 1805, and enlarged in 1839, contains 750 sittings. There is a Free church of Snizort; and five schools—Bernisdale, Glenhinnisdal, Kensaleyre, Uig, and the Macdiarmid foundation—with respective accommodation for 120, 33, 76, 134, and 64 children, had (1893) an average attendance of 69, 14, 34, 88, and 61, and grants of £88, 18s. 6d., £27, 5s., £55, 7s. 6d., £94, 14s., and £81, 3s. 6d. Pop. (1801) 2144, (1831) 3487, (1861) 2639, (1871) 2326, (1881) 2120, (1891) 1908, of whom 1818 were Gaelic-speaking, and 15 were in Stenscoll *quoad sacra* parish.

Snizort, Loch, a sea-loch in the NW of Skye, entering from the Little Minch between the promontories of Trotternish and Vaternish. Striking $8\frac{1}{2}$ miles south-south-eastward, and narrowing from 9 miles at the entrance to $3\frac{1}{2}$ miles, it embosoms the Ascrib Islands, sends off Uig Bay to the E, and forks at its head into Lochs Greshernish and Snizort Beag. Of these Lochs Greshernish extends $3\frac{1}{2}$ miles south-south-westward, and varies in width between $1\frac{1}{2}$ and $\frac{1}{2}$ mile; whilst Loch Snizort Beag, winding $6\frac{1}{2}$ miles south-south-eastward, is nowhere more than a mile across.

Soay, an island of Bracadale parish, Skye, Inverness-shire, lying SW of Loch Scaavaig, and S of Minginish, from which it is separated by a strait, called Soay Sound, $5\frac{1}{2}$ furlongs to $1\frac{1}{2}$ mile wide. The island is 3 miles long from NE to SW, and $1\frac{1}{2}$ mile in extreme breadth; but it is nearly bisected by two bays, indenting it on opposite sides. Its surface is low and broken, and nowhere rises to an elevation of more than 455 feet; and its coast is bold and rocky, and generally presents to the surge perpendicular cliffs of 60 or 70 feet in height. Its rocks present an alternation of red sandstone and greywacke traversed by trap. Pop. (1841) 113, (1861) 129, (1871) 120, (1881) 102, (1891) 78.

Soay. See SOYEA.

Solway Firth (the *Ithunæ Aestuarium* of Ptolemy), a projection of the Irish Sea north-eastward between Scotland and England. Its entrance on the English side is obviously at St Bees Head in Cumberland; but, on the Scottish side, is far from being distinctly marked, and has been very variously stated. Burrow Head, at the southern extremity of the district of Machars in Wigtownshire, is the farthest and the most commonly assigned entrance; yet between that headland and Balmae Head or even Balcarray Point, respectively $15\frac{1}{2}$ and 25 miles in a straight line east-north-eastward, the whole Scottish coast directly confronts the entire expanse of the Irish Sea. Starting from Burrow Head, the firth measures $32\frac{1}{2}$ miles across the entrance, and 49 miles in length; but measured from Balcarray Point, it is only 22 miles across the entrance, and $36\frac{1}{2}$ miles in length. From Balcarray Point to the mouth of Pow Water in Cummertrees, it extends nearly due north-eastward, and gradually contracting in width, though with occasional expansions, has a maximum breadth of $18\frac{1}{2}$ miles, a minimum breadth of 7, and a mean breadth of 13. From the mouth of Pow Water to its head—a distance of $13\frac{1}{2}$ miles—it extends in an easterly direction, and has a varying breadth of from $1\frac{1}{2}$ mile to $8\frac{1}{2}$ miles—the maximum being at Moricambe Bay, and the minimum near the Solway Viaduct. The streams, bays, and coasts of the firth on the English side do not come within our scope. The Sark, Kirtle Water, and some smaller streams enter it on the Dumfriesshire coast, without

forming estuaries; the Annan, Pow Water, and Lochar Water enter it on the same coast through estuaries of but small extent; and the Nith, before entering it, forms a long and gradually expanding estuary between Dumfriesshire and Galloway. The chief streams which enter it in Galloway, calculating to the extreme point of Burrow Head, are Southwick Water, Urr Water, the Dee, the Fleet, the Cree, and the Bladenoch; and its principal marine expansions within the same range of seaboard are the estuary of the Urr, Auchencairn Bay, Kirkcudbright Bay, Fleet Bay, and chief of all, Wigtown Bay. The coast along Dumfriesshire is low and sandy, and ascends by an exceedingly low gradient from the line of high-water mark; but along the greater part of Galloway it is bold and rocky, and exhibits cliffs, caverns, pinnacles, isolated rocks, and a variegated rampart in such frequent and curious combinations as to produce abundance of picturesque scenery. The lighthouse at Southerness Point, which had been out of use for many years, was restored in 1894 at an expense of £250.

The Solway, as to the depth of its water, the character of its beach, and especially the phenomena of its tides, differs widely from every other firth in Scotland, or even from every other marine indentation in the world. Over a distance of about 20 miles from its head, the whole of its bed, excepting the narrow and canal-like channels of the Nith and the confluent waters which enter near the eastern extremity, is alternately a surgy brown sea, tintured with silt, and oscillating with the tide, and a naked, flat, unrelieved expanse of sand, a wilderness of desolation, a miniature Sahara, strangely interposing its dark dreary projection between the blooming slopes of Cumberland and the fertile lands of Scotland. Much of its beach, or rather of its bed, even in its broader and more seaward parts, is of the same character; so very much, indeed, that were the firth estimated only by the space it covers at low water, it would figure in comparative insignificance. All its tides are rapid, and constitute rather a rush or careering race than a flow or a current of waters. A spring tide, but especially a tide which runs before a stiff breeze from the S or the SW, careers along at the rate of from 8 to 10 miles an hour. It is heard by the people along the shore more than 20 miles before it reaches them, and approaches with a hoarse loud roar, with a tumult far more sublime than if the wide sandy waste were scoured by the fleetest host of invading cavalry. Before the first wave can be descried from the shore, a long cloud of spray is seen, as if whirling on an axis, zoned with mimic rainbows, sweeping onward with the speed of a strong steady breeze; then follows a long curved white and flowing surf; and then suddenly appears the majestic van of the tide, a deeply dimpled body of waters, from 3 to 6 feet high, rolling impetuously forward, and bringing closely in its rear a tumbling mass of sea, glittering and gorgeous all over with the most fitful play of the prismatic colours. Accidents occasionally occur with ships, and have been very frequent—though much less so of late years than before—with persons venturing within high-water mark. The rivers which traverse the bed of the firth being easily fordable, strong inducement is offered by the shortness of the path to cross the sands to England during the recess of the tide. But Scotchmen, even when well-mounted, have in numerous instances—sometimes to an extent to constitute a literal catastrophe—been overtaken and drowned while returning from the Cumberland fairs. Even persons best acquainted with the locality are liable to mistake in their calculations of the time when the tide will approach; and, when they are halfway across, may hear the appalling sound of the watery invasion so near and menacing, that a clear atmosphere, a good steed, much self-collectedness, and a steady remembrance of the direction of the path, may all be necessary for their preservation. Dense fogs frequently arise, and so bewilder experienced guides that they can proceed in safety only with the

aid of the compass; and quicksands are occasionally formed, and fitfully shift their localities, to the imminent peril of every intruder who has not watched the impressions made upon the ground by almost every successive tide.

The fisheries of the Solway are extensive and various. Some curious particulars respecting their former condition are furnished in Scott's novel of *Redgauntlet*. The mode of fishing is principally by stake-nets, which are wholly submerged by the tide, and which, when the tide is out, contribute their lank proportions to the prevailing dreariness of the landscape. Salmon, herling, sea-trout, flounders, and codlings are taken in large quantities; turbot and soles occur, but are not plentiful; herrings at a former period were in some seasons caught and cured in great abundance, but of late they appear but occasionally, and not in large numbers; and mussels and cockles are gathered along the shores by poor persons, and carried weekly to the markets of Dumfries and Carlisle. The fishings usually commence early in March, and close before the end of September.

The Solway, in spite of the singular character of its tides, and in spite of the opening of railways, is still of value to Dumfriesshire and Kirkcudbrightshire for its navigation; much more so, in proportion, than it is to Cumberland. Not only the seaboard, but most of the interior of the counties, is far distant from Scottish coal of any sort, and especially from coal of good quality, so is largely dependent on Workington, Whitehaven, and other places near the mouth of the English side of the Solway, for supplies of fuel. The amount of tonnage in vessels employed in importing coals is, in consequence, aggregately great. The export trade, too, of the two counties, or the outlet for the produce of their arable farms, their grazing-grounds, their sheep-walks, their dairies, and their poultry yards, is mainly with Liverpool and other English towns on the western coast, and is largely carried on by the navigation of the Solway. Ordinary tides rise about 10 or 12 feet, and spring tides about 20; and they bring enough of water up to the very head of the firth to let vessels of 120 tons move up the channel of the stream to the foot of the river Sark. The Solway has long been gradually receding from the land; it once filled the large area now occupied by Lochar Moss, and about the end of the 18th century covered lands which are now verdant or arable 1 mile distant from its present high-water mark. The Solway Railway Viaduct, described under ANNAN, was reopened, after reconstruction, in 1884.

Sonachan House, a mansion in Kilchrean parish, Argyllshire, on the SE shore of Loch Awe, 12 miles N by W of Inveraray.

Sorbie, a village and a coast parish of SE Wigtownshire. The village stands 2½ miles W of Garliestown and ½ mile S by E of Sorbie station on the Wigtownshire railway (1875-77), this being 6 miles N by W of Whithorn and 6½ S of Wigtown. It has a post and railway telegraph office, a neat little Free church with bellfied gable to the street, a handsome public school erected in 1875-76 at a cost of more than £1000, and a large creamery; but its damask factory, established about 1790, and long famous through many parts of Britain for the quality of its goods, is now a thing of the past. Pop. (1891) 179.

The parish, containing also the seaport village of GARLIESTOWN, consisted anciently of two divisions, Great and Little Sourbie, each with a church; and now comprises the ancient parishes of Sourbie, Cruggleton, and Kirkmadrine, united about the middle of the 17th century. It is bounded NW and N by Kirkcinner, NE and E by Wigtown Bay, S and SW by Whithorn, and W by Glasserton. Its utmost length, from E by N to W by S, is 6 miles; its utmost breadth is 5½ miles; and its area is 11,366½ acres, of which 1608½ are foreshore and 147 water.* The coast, with a total extent of 10½

miles, is low and flat on the NE, fringed by the broad expanse of the BALDOON Sands; but on the E is rocky and precipitous, in places rising to over 100 feet, and pierced near Palmallet Point by two curious caves, the larger of which is 120 feet long, 100 high, and 36 wide. The chief indentations are GARLIESTOWN BAY and Rigg or Cruggleton Bay, which are flanked on the N by EAGERNESS Point, on the S by Slidery or Cruggleton Point. Both bays are very convenient for shipping, and well adapted for the prosecution of the fisheries. The interior, attaining a maximum altitude of 225 feet at the Gallow Hill, is prettily diversified with gentle eminences and fertile vales; and from several standpoints one gains a superb prospect of the Irish Sea, the Solway Firth, and their far-away mountain screens. One of the vales runs eastward through the centre of the parish, from the bed of Dowalton Loch to the head of Garliestown Bay. The rocks are chiefly Silurian; and the soil, a heavy clay in some of the vales, is elsewhere mostly of dry brownish earth mixed more or less with till or gravel. The old Tower or Place of Sorbie, 1 mile to the E of the village, is a mass of ruin 60 feet high, which forms two sides of a quadrangle, and has been four storeys high. It has lost its pepperbox turrets, and the fine old trees which till lately surrounded it have nearly all been felled. From the beginning of the 16th till the latter part of the 17th century, it was the seat of the Hannays, one of whom, Patrick, served the 'Winter King' in the Thirty Years' War, and published a very scarce volume of Poems (1622). Another minor poet, Robert Cowper, M.D. (1750-1813), was born at Balsier Farm. The antiquities of CRUGGLETON, EAGERNESS, and KIRKMADRINE are noticed separately, as also is GALLOWAY HOUSE, whose owner, the Earl of Galloway, is chief proprietor. Sorbie is in the presbytery of Wigtown and the synod of Galloway; the living is worth £290. The parish church, successor to one at Sorbie village, is situated at Millisle, 1½ mile WNW of Garliestown. Built in 1874-76 at a cost of £2500, it is a cruciform Early English edifice, with 450 sittings, a SW tower and spire over 60 feet high, and a stained E window in memory of the late Earl of Galloway. In 1890 the church was renovated and a new manse built. There are tile works at Millisle. Two public schools, Garliestown and Sorbie, with respective accommodation for 188 and 160 children, had (1893) an average attendance of 136 and 130, and grants of £130, 17s. 6d. and £121, 14s. 6d. Pop. (1801) 1091, (1831) 1412, (1861) 1814, (1871) 1667, (1881) 1696, (1891) 1563.—*Ord. Sur.*, shs. 4, 2, 1857-56.

Sorn, a village and a parish in the NE of Kyle district, Ayrshire. The village stands on the right bank of the river Ayr, 2½ miles ENE of Catrine, and 4½ E of Mauchline, under which it has a post office. The Sorn Constitutional Club was erected and presented to the Sorn Constitutional Association by James Somervell, Esq., of Sorn Castle. Pop. (1861) 363, (1871) 393, (1881) 354, (1891) 302.

The parish, containing also the town of CATRINE, was disjoined from Mauchline in 1692, and bore for some time the name of Dalgairn. It is bounded N by Galston, NE by Avondale in Lanarkshire, E by Muirkirk, S by Auchinleck, and W by Mauchline. Its utmost length, from E to W, is 6½ miles; its utmost breadth, from N to S, is 6½ miles; and its area is 30 square miles or 19,300 acres, of which 116½ are water. A small detached part of the parish, situated at Garfield and comprising 11 acres, was transferred by the Boundary Commissioners in 1891 to the parish of Mauchline, by which it had been surrounded. The river Ayr, flowing between steep, bold, copse-clad banks, has here a west-by-southerly course of 9½ miles—for the first 3½ furlongs along the Muirkirk, and for the last 7½ along the Mauchline boundary. CLEUGH Burn runs 4 miles south-westward to the Ayr between Sorn Castle and the parish church, and makes several romantic waterfalls; whilst CESSNOCK Water, rising on Auchmannoch Muir, runs 4½ miles south-westward, till it passes off into Mauchline on its way to the river Irvine. The surface sinks in

* According to the Ordnance Survey, but this water-area has been almost reduced, to nil by the draining in 1862-63 of DOWALTON LOCH, at the meeting-point of Sorbie, Kirkcinner, and Glasserton parishes.

the extreme SW to 297 feet above sea-level; and thence it rises to 657 feet at Roundsham, 694 at AIRDS Moss, 557 near Sorn Mains, 887 at Burn o' need Rigg, 964 at AUCHMANNOCH Muir, 961 at Tincornhill, 1342 at Blackside, and 1340 at Auchinlongford Hill. Of these, Blackside commands a magnificent view over Ayr and Lanark shires, and parts, it is said, of 14 other counties. Coal, ironstone, and limestone have all been worked; sandstone is plentiful; and fine specimens of calc-tuff are found in the Cleugh Burn glen. The soil of the haughs is a gravelly loam; on many of the arable slopes and braes is a reddish clay; and, on the skirts and shoulders of the hills, is a mossy earth or moss itself, sometimes incumbent on clay. Nearly one-sixth of the entire area is regularly in tillage; rather more than 600 acres are under wood; and the rest of the parish is meadow, coarse hill pasture, or moss. Sorn Castle, 1½ mile NE of Catrine, is charmingly situated on a lofty and well-wooded rocky terrace overlooking the river Ayr. The building is of very high but unknown antiquity. About the year 1406 it became, along with the manor of Sorn and other lands in Kyle, the property of Andrew Hamilton, third son of Sir David Hamilton of Cadzow, ancestor of the Duke of Hamilton; and in subsequent times it passed by marriage to the Earls of Winton, and by purchase to the Earls of Loudoun. Margaret Dalrymple, Dowager-Countess of Loudoun (1678-1777), lived and died in it, attended by servants nearly as old as herself. Under the persecutions of Charles II., the castle was taken possession of as a fortalice of the royal forces, and made the seat of a garrison for overawing the Covenanters.* Purchased by his family towards the close of the 18th century, it now is the seat of James Somervell, Esq. (b. 1845; suc. 1881). CATRINE HOUSE, noticed separately, has memories of Dugald Stewart and his father. The 'prophet,' Alexander Peden (1626-86), was born and died in the parish. Exhausted with his prolonged toils and sufferings in traversing the kingdom as a proscribed minister, and believing death to be near, he returned to his brother's house in Sorn to die; but he was there in the immediate vicinity of the garrison posted in Sorn Castle, so lived chiefly in an artificial cave—uniformly protected, as he had been in a hundred places before, from the peering searches of the bloodthirsty soldiery. He was visited on the death-bed by the celebrated James Renwick. (See CUMNOCK.) Another native was Joseph Train (1779-1852), poet and antiquary. In 1871 the *quoad sacra* parish of CATRINE was disjoined from Sorn, which itself is a parish in the presbytery of Ayr and the synod of Glasgow and Ayr. The living is worth £215. The parish church, ½ mile W by N of Sorn village, was built in 1658, and, as enlarged in 1826, contains 611 sittings. Three public schools—Auchincloich, Catrine, and Sorn—with respective accommodation for 55, 500, and 216 children, had (1893) an average attendance of 23, 392, and 111, and grants of £38, 8s., £415, 14s., and £114, 3s. 6d. Valuation (1885) £21,105, (1894) £21,004. Pop. (1801) 2606, (1831) 4253, (1861) 4042, (1871) 4032, (1881) 4255, (1891) 3919, of whom 1461 were in Sorn ecclesiastical parish.—*Ord. Sur.*, shs. 14, 22, 15, 23, 1863-65.

Soulseat. See SAULSEAT.

South Alloa. See ALLOA, SOUTH.

Southannan, an estate in the N of West Kilbride parish, Ayrshire, 4 miles S of Largs. It belonged for

* Sir William Hamilton, whose daughter and heiress married George Lord Seton, and carried the property to the Earls of Winton, was one of the senators of the College of Justice, and Lord-treasurer to James V. On the eve of the daughter's marriage, the king set out to honour the bridal with his presence; but he had to traverse a long and dreary tract of moor, moss, and miry clay, where there was neither road nor bridge; and when about half-way from Glasgow he rode his horse into a quagmire, and was with difficulty extricated from his perilous seat on the saddle. Far from a house, exposed to the bleak wind of a cold day, and environed on all sides by a cheerless moor, he was compelled to take a cold refreshment by the side of a well, and at length declared that 'were he to play a trick on the devil, he would send him to a bridal at Sorn in the middle of winter.' The well at which he sat is still called the King's Well; and the quagmire into which his horse went is known as the King's Stable.

centuries to the Lords Sempill, and belongs now to the Earl of Eglinton; is traversed by a romantic burn, making a series of beautiful falls; and gives name to a long reach of foreshore sands, of half-moon form, sheltered by a curving recess in the land, which, when the tide is out, have a maximum breadth of 1½ mile, and are notable for beds of shell-fish and flocks of wild-fowl. A ruined mansion on the estate, near a fine cascade of the burn, was built in the time of James VI. by one of the Lords Sempill after an Italian model.—*Ord. Sur.*, sh. 21, 1870.

Southbarr. See INCHINNAN.

Southdean, a large Border parish of SE Roxburghshire, containing Chesters hamlet, near the left bank of Jed Water, 7 miles SSW of Jedburgh and 9 ESE of Hawick, under which there is a post office of Southdean. Comprising since 1777 one-half of the ancient parish of ABBOTRUE, it is bounded NW and NE by Jedburgh, E by Oxnam, SE by Northumberland, SW by Castleton, and W by Hobkirk. Its utmost length, from N by E to S by W, is 10½ miles; its utmost width is 7½ miles; and its area is 43½ square miles. The area was slightly increased by the Boundary Commissioners in 1891, when they transferred to the parish that part of the old Jedward detached portion of the parish of Jedburgh which lay within the farm of Mervinslaw. JED WATER, rising, as Raven Burn, at an altitude of 1500 feet, on the western slope of Carlin Tooth, within ½ mile of a head-stream of the English TYNE, has here a north-north-easterly course of 15 miles—over the first 9 through the interior, and then along most of the Jedburgh and Oxnam boundary—until, just above Fernieherst, it passes off from this parish, whose western border is drained by head-streams or early affluents of RULE WATER. In the extreme N the surface sinks along the Jed to close on 400 feet above the sea; and chief elevations, from N to S, are Faw Hill (1086 feet), Mervins Law (836), Belling Hill (1162), Wolflee Hill (1288), CARTER FELL (1899), and Carlin Tooth (1801), summits of the CHEVIOTS these, which separate Tyndale and Liddesdale from Southdean, itself a portion of Teviotdale. The southern district is boldly hilly; and the northern also contains much upland pasture, yet is softer in feature than the southern district, and comprises a considerable extent of arable land. About 500 acres are under wood, and about 3000 in tillage. The soil of the arable lands is variously gravel, light black earth, and strong clay. Excellent red and white sandstone has been worked in several quarries; limestone is inexhaustible; coal has been vainly sought for; and antimony occurs, but not in such quantity as to be profitably worked. British camps and Border peel-houses exist in such number as to show how stirring and blood-stained an arena the parish must have been of early wars and marauding. Close to the English Border, 5½ miles ESE of Chesters, is the scene of the 'Raid of the Redeswire,' 7 July 1575, when some Scots, resenting the slaughter of one of their countrymen, made a vengeful attack on the offenders, and were repulsed. But meeting in their flight a body of the men of Jedburgh, who joined them, they wheeled round on their pursuers, completely routed them, killed Sir George Heron, an eminent Northumbrian, and carried prisoners to Dalkeith Sir John Forster, the warden, and some considerable persons, his attendants. (See JEDBURGH.) James Thomson (1700-48) was the son of a former minister, who removed here from Ednam a few weeks after the poet's birth, and whose monument in the churchyard was renewed in 1866. Thus most of the impressions which formed his characteristic style of poetry were gained from Southdean and its neighbourhood. The Rev. Mr Veitch and Mr Bryson found among the Southdean hills a retreat from persecution. Mr James Davidson, who had terriers called Pepper and Mustard, and was an enthusiastic lover of field-sports, occupied the farm of Hyndlee, 2½ miles N of the mountain pass into Liddesdale called 'Note o' the Gate,' and 10 SE of Hawick. He is believed, in the district, to have been the original of Sir Walter's Scott's 'Dandie

Diamond' in *Guy Mannering*. Mansions are WOLFELEE, ABBOTRUE, and Glendouglas. Giving off a portion to Edgerston *quoad sacra* parish, Southdean is in the presbytery of Jedburgh and the synod of Merse and Teviotdale; the living is worth £341. The old church stands in ruins on the right bank of Jed Water, $\frac{1}{2}$ mile S by E of Chesters. The present parish church, at Chesters, successor to one of 1690, was built in 1876, and is a tasteful Early English edifice, one of whose stained windows is a memorial to the poet Thomson. The public school, with accommodation for 110 children, had (1893) an average attendance of 59, and a grant of £62, 7s. 6d. Pop. (1801) 697, (1841) 863, (1861) 759, (1871) 753, (1881) 724, (1891) 672, of whom 612 were in the ecclesiastical parish.—*Ord. Sur.*, sh. 17, 1864.

Southend, a village and a parish at the southern extremity of the peninsula of Kintyre, Argyllshire. The village stands $9\frac{1}{2}$ miles S by W of Campbeltown, under which it has a post office, with money order, savings bank, and telegraph departments.

The parish, comprising the ancient parishes of Kilcolmkill and Kilblane, includes the island of SANDA and the adjacent islets, and has been called Southend since the Reformation. It is bounded N by the parish of Campbeltown, and on all other sides by the sea. Its utmost length, from E to W, is $10\frac{1}{2}$ miles; its breadth, from N to S, varies between $2\frac{1}{2}$ and $6\frac{1}{2}$ miles; and its area is 31,160 acres, of which $277\frac{1}{2}$ are foreshore and $81\frac{1}{2}$ water. The coast, $20\frac{1}{2}$ miles in extent, is slightly indented by three or four little baylets capable of affording anchorage to vessels, and terminates on the SW in the bold broad promontory of the Mull of Kintyre. It is chiefly sandy in the E, but high, bold, and very rocky in the W, and in its high bold parts abounds with caves, and presents a striking appearance as seen from the sea. The interior exhibits a picturesque variety of heights and hollows, pastoral hills and arable vales, low grounds and heathy eminences. Chief elevations, from E to W, are Kerran Hill (775 feet), Tod Hill (610), Cnoc Mor (399), *Cnoc Odhar (907), Beinn na Lice (1405), and *Cnoc Moy (1462), where asterisks mark those summits that culminate on the northern border. The last, Cnoc Moy, commands a magnificent panoramic view. Two brooks, Conieglan Water and the Breackerie Water, which drain the surface southward to the sea, are subject to sudden inundating freshets, and sometimes cut out for themselves reaches of new channel. Mica slate, trap, Old Red Sandstone, and limestone are the principal rocks; and the trap has been quarried for masonry, the limestone worked for manure. The soil on the eastern seaboard is a light loam mixed with sand or gravel; that on the slopes of the hills is mostly a light gravel incumbent on till. The proportion of arable land to pasture is nearly as 1 to 15. Antiquities, other than that noticed under DUNAVERTY Castle, are remains of Scandinavian forts, some ancient standing-stones, and ruins or vestiges of three pre-Reformation chapels, one of which is said to have been founded by St Columba. Mansions, noticed separately, are CARSKY and KEIL; and the Duke of Argyll owns nearly five-sixths of the entire rental. Southend is in the presbytery of Kintyre and the synod of Argyll; the living is worth £193. The parish church was built in 1774, and contains 600 sittings. There is a Free Church preaching station; the U.P. church, originally Relief, was built in 1798. Two public schools, Glenbreackerie and Southend, with respective accommodation for 45 and 150 children, had (1893) an average attendance of 32 and 63, and grants of £53, 15s. and £98, 8s. Pop. (1801) 1825, (1831) 2120, (1861) 1214, (1881) 955, (1891) 844, of whom 116 were Gaelic-speaking.—*Ord. Sur.*, sh. 12, 1872.

Southerness, a village in Kirkcubright parish, SE Kirkcubrightshire, at Southerness Point, on the Solway Firth, 10 miles SE of Dalbeattie, and 16 S of Dumfries. It was built some time after the middle of the 18th century by Oswald of Auchencruive near Ayr, in the expectation of its becoming a mining-village and depot for coal; but the desired mineral having been vainly searched for in the neighbourhood, the village became transmuted

into a sea-bathing retreat. Southerness Point screens the W side of the entrance of the estuary of the Nith, and is crowned by a lighthouse that had been disused for many years, but was restored in 1894 at an expense of £250.—*Ord. Sur.*, sh. 6, 1863.

South Esk. See **ESK**, **SOUTH**.

Southfield, a village in Dalry parish, Ayrshire, $1\frac{1}{2}$ mile NE of the town.

Southfield, a village in Slamannan parish, Stirlingshire, 5 furlongs W of Binniehill, and 1 mile W by S of Slamannan station.

South Hall, a mansion in Inverchaolain parish, Argyllshire, on a picturesque reach of the Kyles of Bute, 5 miles NNW of Rothesay. Its owner is Col. Duncan Campbell (b. 1814; suc. 1864). The woods about the mansion-house were planted by a former proprietor, General Campbell, to represent one of the incidents of the battle of Waterloo, at which he fought as an officer of a Highland regiment. The square patch of Scotch firs in the centre of a large clump of larches, at the end of the woods nearest Loch Striven, represents the Highlanders formed in square resisting the onslaughts of Napoleon's cavalry.—*Ord. Sur.*, sh. 29, 1873.

Southwick. See **COLVEND**.

Soutra, an ancient parish formerly on the SW border of Haddingtonshire, and annexed since 1589 to the contiguous parish of FALA in Edinburghshire, to which county it was transferred by the Boundary Commissioners in 1891. The hospital and church of 'Soltre' stood near the top of Soutra Hill (1209 feet), $5\frac{1}{2}$ miles SE of Pathhead, 6 E by S of Tynehead station (only $3\frac{1}{2}$ as the crow flies), and $16\frac{1}{2}$ SE of Edinburgh. The hospital was founded by Malcolm IV., in or a little before 1164, for pilgrims, travellers, and poor folk, and was dedicated to the Holy Trinity. Mary of Gueldres annexed its lands to Trinity College, Edinburgh, in 1462; and after the Reformation its church ceased to be maintained as a distinct parochial charge, and the buildings fell into ruin. About 1850 every vestige of wall and foundations was dug up and carted away for building dykes and farm steadings, with the exception of a small aisle, which in 1866 had been appropriated as a burial vault by the Pringles of Beadsman's Acres. Soutra Hill is the most westerly ridge of the Lammermuir, and commands a view, over the Lothians and the Firth of Forth, to the hills of Fife.—*Ord. Sur.*, sh. 33, 1863. See David Laing's *Registrum Domus de Soltre* (Bannatyne Club, 1861), and the Rev. J. Hunter's *Fala and Soutra* (1892).

Soya. See **SOAX**.

Soyea, a pastoral islet of Assynt parish, W Sutherland, off the mouth of Loch Inver, $2\frac{1}{2}$ miles W by S of Lochinver village. It measures $5\frac{1}{2}$ by $1\frac{1}{2}$ furlongs, and rises to a height of 110 feet.—*Ord. Sur.*, sh. 107, 1881.

Spango Water. See **KIRKCONNEL**.

Spean, a river of Laggan and Kilmonivaig parishes, Inverness-shire, issuing from Loch Laggan (819 feet), and winding $20\frac{1}{2}$ miles westward till, after a descent of 728 feet, it falls into the Lochy at Bridge of Mucomir, 3 furlongs below the Lochy's efflux from Loch Lochy. At a point $\frac{1}{2}$ mile below Loch Laggan, the Spean receives from the S the large stream emitted by Loch Ossian; and near Bridge of Roy it receives from the N the Roy. Its other affluents, though numerous, are individually inconsiderable. Its salmon, sea trout, and river trout afford capital sport. At Spean Bridge, west of Bridge of Roy, there is a station of the West Highland railway. On 9 Sept. 1873 the Queen, en route for Inverlochry, 'drove along through GLENSPEAN, which is very fine and grand in some parts, the road looking down upon the rapid, rushing, gushing river, as it whirls along embedded in rocks, and overhung with wood, while high ranges of hills, fine and pointed in shape, are seen in the distance, rising peak upon peak. Along this road I had driven when staying at ARDVERKIE, but I had forgotten it.'—*Ord. Sur.*, shs. 63, 62, 1873-75.

Spean Bridge. See **KILMONIVAIG**.

Speddock, a mansion in Holywood parish, Dumfriesshire, 10 miles WNW of Dumfries. Its owner is John

Henry Gilchrist-Clark, Esq. (b. 1861; suc. 1881).—*Ordn. Surv.*, sh. 9, 1863.

Spedlins Tower. See JARDINE HALL.

Spey (the *Tuëssis* of Ptolemy), a river rising near the centre of the southern part of Inverness-shire, and flowing first E and then NE through that county, and thereafter NE through the county of Elgin, or on the boundary between that county and Banffshire, till it reaches the sea near the centre of Spey Bay between Lossiemouth and Portknockie. It is the most rapid river in Scotland, and in point of length and volume of water is inferior only to the Tay—taking the longest tributary among the head waters of that river as forming the source—while the area of its drainage basin is inferior only to those of the Tay and Tweed. The Spey and the smaller streams flowing to it drain all the south-eastern part of Inverness-shire except the extreme S (nearly $\frac{1}{2}$ of the area of the whole county), all the eastern part of the county of Elgin (nearly half the whole area), and all the upper, and the greater portion of the central district of Banffshire (also nearly half the area of the whole county). The NW side of the drainage basin begins at Corrieyairack, which divides the upper waters of the Spey from those of the Tariff flowing to Loch Ness; and from that mountain the line of watershed stretches away to the north-eastward along the Monadhliadh Mountains, which divide it first from the Loch Ness basin and then from that of the Findhorn. At the N end of these heights the line strikes across the Slochdmuick Pass, and keeps north-eastward along the heights of Braemora, to the E of the Knock—these separating it from the valleys of the Divie and Dorchob (Findhorn basin). At KNOCKANDO it turns eastward along the Mannoch Hill, and, passing to the N of the village of Rothies, follows a north-easterly and northerly course to the sea. The heights last mentioned separate the Spey basin from that of the Lossie. On the SE side, beginning at the sea, the line passes southwards, to the E of the village of Fochabers, to between Mulben and Keith, where it curves first south-westward and then south-eastward round the source of the Isla, and thereafter follows mainly a south-westerly direction, first along the high ground between Glen Fiddich and the upper waters of the Deveron, and then between Glen Livet and the upper waters of the Deveron. At the upper end of Strathdeveron it becomes identical with the boundary between the counties of Banff and Aberdeen, and follows that line along the heights round the head of Strathdon which separate it from the middle part of the valley of the Aven; and farther S along those that separate Glen Aven from the upper part of the valley of the Dee, by Ben Avon (3843 feet), Beinn a Bhuird (3924) Beinn a Chaoruinn (3553), and Ben Muich Dhui (4244) to the point on the SW slope of Cairngorm where the counties of Inverness, Banff, and Aberdeen meet. From this the line of watershed is identical with the boundary line first between the counties of Inverness and Aberdeen, and thereafter between the counties of Inverness and Perth, as far as the Athole Sow. From the Athole Sow the line passes northwards close to Loch Erich, round the N end of that loch, and back along the opposite side as far as Meall Cruaidh (2941 feet), whence it again passes northward between the Mashie Water (Spey) and river Pattack (Loch Laggan), round the N end of Loch Laggan to Carn Liath (3298). Thence it passes with a curve to the NW up the slope of Creag a' Chait to the top of Carn Leac (2889 feet), and from that across the Pass of Corrieyairack (2507) to Corrieyairack itself (2922). The total area of the basin may be taken as about 1300 square miles; and the whole length of the river from source to sea, following all the windings, is 107 miles.

The source is a small stream which rises about 1500 feet above sea-level on the SE side of Creag a' Chait, 5 miles from the western shore of Loch Laggan, and close to the watershed between the E and W coasts of Scotland—the head waters of the river Roy, which flows to the Spean, coming from the same shoulder. About 1 mile from the source this head-stream expands into

the small Loch Spey (3 furlongs by 100 yards, and 1142 feet above sea-level), and from this the course is eastward for 15 miles, till beyond Cluny Castle it turns to the NE, and then more to the N as it approaches the sea. The total length of the course, inclusive of windings, in Inverness-shire, is 53 $\frac{1}{2}$ miles; for 5 $\frac{1}{2}$ miles thereafter it forms the boundary between the counties of Inverness and Elgin; from a point 2 miles S of Cromdale Church, NW to about a mile from the mouth of the Aven, it flows through Elginshire; for more than 22 miles from this point near the Aven to Ordiequish—except at Rothies, where for a short distance it has Elginshire territory on either side—it forms the boundary between the counties of Elgin and Banff; and over the rest of the course it is through Elginshire. Thirty-three and one-half miles from the source the river expands into Loch Insh ($1 \times \frac{1}{2}$ mile, and 721 feet above sea-level). Within 4 miles of Loch Spey the river receives a very large number of tributary streams—forming the minor head waters—of which the chief are a stream (S) from a height of 3000 feet from Coire a Bhan-coin W of Carn Liath; another (N) from about 2800 on Carn Leac, the Allt Yairack (N) from the Pass of Corrieyairack, and the Allt a Chaoruinn (S) from Carn Liath. In the E and W part of the course the other principal tributaries are the Markie Burn (N) from Glen Markie, Mashie Water (S) from Strath Mashie, and the Allt Breakachy (S). About 2 miles below the point where the river turns to the NE it is joined by the Truim, from Glen Truim, at the battlefield of Invernahavon; and between that and Loch Insh are the Calder (N) at Spey Bridge near Newtonmore, the Kingussie Burn (N) at Kingussie, the river Tromie (S) from Glen Tromie, and the Raitts Burn (N) at Belleville. Half-a-mile below Loch Insh is the Feshie (S) from Glen Feshie, and between this and the point where the river quits Inverness-shire are the Drue (S) from Rothiemurchus Forest and Glenmore, at Aviemore; Milton Burn (S) at Kincardine; the Nethy (S) from Abernethy Forest and Strath Nethy; and the Dulnan (NW). In the upper part of Elginshire the Spey is joined by a large number of streams, but none of them are of any great size, the chief on the NW side being the Craggan, Cromdale, Dellifur, Tulchan, and Gheallaidh Burns, and a little above the latter is the Aven from the S. Between this and Ordiequish the chief tributaries on the Elginshire side are the Allt Arder, Knockando Burn, Ballintomb Burn, and the burns described in the account of the parish of ROTHES; and on the Banffshire side Carron and Aberlour Burns, and the Fiddich, the latter joining at Lower Craigellachie. Above Ordiequish the basin narrows, and here the side streams are small, the largest being the Red or Orbliston Burn on the left bank, and the Burn of Fochabers on the right.

The Spey has but little commercial importance, as no part of it is properly navigable, though there was formerly, and is to some extent still, a natural harbour suitable enough for small vessels, at the mouth of the river at Kingston. This was, however, rendered inconvenient, first by the shifting of the river mouth steadily westward subsequent to 1851, and still more so in 1860 by the cutting of a new channel at the point where the river now joins the sea—an operation rendered necessary by this shifting. Shipbuilding is still carried on at the mouth at both KINGSTON and GARMOUTH, and timber is still taken in rafts or 'floats' down the river from the woods along the middle reaches, though not to the same extent as of old. The Spey is the third salmon river in Scotland, ranking next the Tay and Tweed. The fishings are in the hands of many proprietors, the Duke of Richmond and Gordon's extending from Boat of Bridge to the sea. The upper fishings are poor, except when floods enable the fish to get readily past the cruipe on the Richmond waters. No trout fishing is allowed from 15 April to 1 June, in order to protect the smolts on their way to the sea, and the net fishing closes on the 25 August, but the rod fishing not till the 15 October.

The channel along the lower part of the course often

shifts, a process rendered particularly easy during floods by the loose nature of the shingle of which the bottom and sides are composed. The shingle is constantly being moved down the river, and it is probably from boulders thus carried down that the great gravel ridges to the W of the mouth of the river have been formed. From the large extent and high-lying character of the sources of the Spey itself, as well as of its principal tributaries, the river is subject to sudden and heavy freshets. The greatest was that of 1829, the damage done by which was enormous. There is a graphic description of the after appearances all along the course of the river from Kingussie downwards, in Sir Thomas Dick Lauder's *Account of the Moray Floods*. In winter and spring large masses of ice are carried down by the river, but from the rapidity of the current it is seldom that any portion of the lower part of the river is frozen completely over, though this certainly happened near the mouth in 1854. At Kingussie, Fochabers, and elsewhere there are beautifully marked river terraces.

As regards scenery, Macculloch places the Spey—and probably rightly—below all the great branches of the Tay, the Forth, the Dee, the Isla, and the Earn. The course, from the source to about the mouth of Glen Truim, lies through an upland glen with nothing of grandeur or even picturesqueness about it, the base from which the surrounding hills rise being too far above sea-level to allow of their height telling with full force. From about Cluny Castle downwards trees begin to make their appearance along the lower heights, skirting the valley, and though some portions between this and Loch Insh are still bleak-looking, the general appearance of the country decidedly improves, though even about Kingussie and Belleville it can hardly be said, notwithstanding the fine mountain screens, to be pretty or picturesque. About Loch Insh still further improvement takes place, and the Queen, who passed it on the way from Balmoral to Grantown in 1860, speaks of the loch itself as 'lovely . . . though not a wild lake, quite the contrary; no high rocks, but woods and blue hills as a background.' From this onward by Kinrara, Loch Alvie, and Aviemore, there is more wood, that on the E extending to a height of 1500 feet, and forming part of the great Rothiemurchus and Glen More Forests. 'Though many splendid landscapes,' says Dr Macculloch, 'in one of the few grudging paragraphs he gives to the beauties of the Spey, are obtained along the roadside between Aviemore and Kinrara, constituted by the far-extended fir-woods of Rothiemurchus, the ridge of Cairngorm, the birch-clad hill of Kinrara, and by the variety of the broken, bold and woody banks of the Spey, no one can form an adequate idea of the beauties of this tract, without spending days in investigating what is concealed from an ordinary and passing view. By far the larger proportion of this scenery also is found near to the river, and far from the road; and the most singular portions of it lie on the east side of the water, and far beyond it, in places seldom trodden and scarcely known. This, too, is a country hitherto undescribed, and therefore unseen by the mass of travellers; though among the most engaging parts of the Highlands, as it is the most singular: since there is nothing with which it can be compared, or to which, indeed, it can be said to bear the slightest resemblance. Much of this depends on the peculiar forms and distribution of the ground and of the mountains, and still more on the character of the wood, which is always fir and birch; the latter, in particular, assuming a consequence in the landscape, which renders the absence of all other trees insensible; and which is seen nowhere in the same perfection, except at Blair, and for a short space along the course of the Tummel. Of this particular class of beauty Kinrara is itself the chief seat; yielding to very few situations in Scotland for that species of ornament which, while it is the produce of Nature, seems to have been guided by art. A succession of continuous birch forest covering its rocky hill and its lower grounds, intermixed with open glades, irregular clumps, and scattered trees, combines the discordant characters of wild mountain

landscape and of ornamental park scenery. The Spey, here a quick and clear stream, is ornamented by trees in every possible combination, and the banks beyond, rising into irregular, rocky, and wooded hills, everywhere rich with an endless profusion of objects, and as they gradually ascend, displaying the dark sweeping forests of fir that skirt the bases of the farther mountains, which terminate the view by their bold outlines. To wander along the opposite banks is to riot in a profusion of landscape, always various and always new: river scenery, of a character unknown elsewhere, and a spacious valley crowded with objects and profuse of wood.' From Aviemore—close to which are the beautiful birch-clad crags of Upper Craigellachie—downwards the banks are often very bleak and bare, but at many points where they are well wooded—and this is not now so rarely the case as it once was—the scenery is good, more particularly about Boat of Garten, where the great Abernethy Forest stretches away to the E, and farther down about Aberlour and Lower Craigellachie, and from this almost all the way down to Fochabers. From Craigellachie downwards there are a series of fine fertile haughs chiefly on the W side of the river. At Ruthven, a short way above Kingussie, a three-span, cylindrical pierced, steel bridge was built across the Spey in 1894.

The Spey was, in the early period of Scottish history, the boundary between the province of MORAY and the Scotia of that time. The first part of the course of the river lies in the district of Badenoch, from Upper to Lower Craigellachie is Speyside pure and simple or Strathspey, and below Lower Craigellachie are the haughs of Rothies, Dundreas, Orton, and Dipple. Strathspey is the home of the Grants, whose motto of 'Stand Fast, Craigellachie,' was taken from the crags at its upper and lower extremities. It has given name to a peculiar dance somewhat slower than the reel, and which is said to have been first practised in the district. See also the articles on Laggan, Kingussie, Alvie, Duthil, Abernethy, Cromdale, Knockando, Aberlour, Rothies, Boharm, Bellie, and Speymouth; Sir Thomas Dick Lauder's *Account of the Moray Floods* (1st ed., Edinb. 1830; 4th, Elgin, 1873); and Longmuir's *Speyside* (Aberdeen, 1860).

Speymouth, a parish in the extreme NE of Elginshire. It is bounded NW and N by the parish of Urquhart, E by the parish of Bellie, S by the parish of Rothies, and SW by the Teindland district of the parish of St Andrews-Llanbryd. The boundary all along the E side is the centre of the course of the Spey; elsewhere it is almost entirely artificial, though in the NW at Lunan Wood it follows for $\frac{3}{4}$ mile the centre of the road along the valley of the Spey from Garmouth upwards. The greatest length, from the centre of the Spey a little below Essil south-south-westward to the top of Findlay's Seat, is $7\frac{1}{2}$ miles; the average breadth at right angles to this is about $1\frac{1}{2}$ mile; and the area is 6352·370 acres, of which 327·082 are water. In the N the surface is low, but rising abruptly almost at once it passes southward in an undulating plateau from 150 to 200 feet above sea-level, and with a steep bank along the course of the Spey. Towards the SW it rises still higher, reaching its greatest height in the SW corner at Findlay's Seat (861 feet). In the N the steep bank just mentioned approaches close to the river, but to the SE at Dipple there is a stretch of fine haugh having an extreme breadth of about $\frac{3}{4}$ mile. About half the parish is moorish, pastoral, or woodland, and about 100 acres along the river are pebbles or bare beach. The soil of the haugh is fertile alluvium, and that of about one-half of the rest of the area is a light loam. The remainder of the parish has a light sandy or gravelly soil, and the sub-soil all over varies from clay to gravel. The underlying rock is Old Red Sandstone, and the beds, which are of a deep red colour, are quarried for local purposes. The drainage is carried off by the Spey and a few small rivulets, of which the chief is the Rod Burn, which crosses the southern part of the parish. Speymouth was formed in 1731 by the union of the old parishes of Dipple and Essil and the barony of Garmouth.

The last, including Garmouth and Kingston, was originally in the parish of Urquhart, from which it was disjoined in 1649, but it was again united to its old parish in 1662. It remained in Urquhart till 1688, and was then re-transferred to Speymouth, in which it remained till 1851, when it was again joined to Urquhart. As the 'king's highway' from Aberdeen northwards has passed through the parish from a very early date, Speymouth has been the scene of several events connected with the history of Scotland. It was here that in 1087 Malcolm Ceanmhor's army crossed the Spey to attack the forces of Maelisnecht, 'Ri Moreb' or King of Moray, and 'won the mother of Maelslaecht and all his best men and all his treasure and cattle.' Bower, in his *Scotti-chronicon*, fixes it also as the scene of the battle, in 1116, between Alexander I. and 'certain people of the Mearns and Moray' that had attacked him while he was engaged in erecting a new palace near Dundee. 'He then pursued the rebels to the river Spey, and there finding his enemies collected in great numbers on the opposite bank, and the river so swollen, and his men unwilling to cross, he gave his standard to Alexander Carron, who plunged into the stream, was followed by the army, and his enemies were put to flight.' The details of the battle are doubtful, though there can be no doubt that some such affair took place. Wynton localises the fight at the Beany, and not at the Spey. It was either in Speymouth or in Urquhart, though more probably in the latter, that Malcolm IV. defeated the Moray men in 1160 before he introduced his Flemish settlers into the lower district of the province. In 1296, and again in 1303, Edward I. crossed at the ford below the church, and encamped in Speymouth, probably at Redhall; and in later centuries the parish shared in all the disturbances in which the Gordons were concerned. The same ford used by Edward's army was also that selected by the troops of Cromwell and Montrose, and again in the 18th century by the forces under the Duke of Cumberland on their way to Culloden. It is noted in the records of the kirk session that there was no service in church on the 23d Feb., 9th, 16th, 23d, 30th March, or the 6th April 1746, in consequence of the presence of the Highland army in the parish. A memorandum recorded by the minister in the same volume tells that on 11 Feb., 'the first body of the rebels, on their return from Lochborough, in England, came to Fochabers, and some of them came to Stynie.' On 23 Feb. some of Crichton of Auchingoul's men 'hindered public worship,' and on 2 March 'several rebels were in church, heard King George prayed for, and made no disturbance;' while under Tuesday, 18 March, it is recorded that 'Lord John Drummond came to the manse, and it became the rebels' headquarters at Spey. About a week after the Duke of Perth came, and the house was frequented by Lord Ogilvie, Sir Wm. Gordon of Park, Sir James Kinloch, Avonchie, Cowbardiie, Major Hales, Mr Fletcher of Benochie, and sometimes others, as Lord Elcho, Lord Strathallan, Lord Balmerinoch, Earle of Kilmarnock, Secretary Murray, Mr Sullivan, and many others. Though this was expensive to the minister, they used him very civilly and gave him no disturbance on point of principle, but there was no public worship during their stay.' On 12 April 'The Duke of Cumberland with his army marched from Cullen, crossed the Spey at a ford directly E. of Speymouth church, with the loss of one man only drowned, and encamped from Redhall to Speymouth manse, where he slept.' He left on the following day, which was a Sunday, for Alves. The Highlanders had retired on the approach of Cumberland's forces, Sir John Drummond and his advisers, who had been left to guard the passage with a force of about 2000 men, deeming the position too open in the rear. There was very little wood then in the 'laigh' of Moray as compared with what there is now, and had the ford been forced the defenders would have had no chance of taking up a fresh position till they reached the Findhorn.

The only person who can in any way be claimed as a

distinguished native is Jane Innes, the wife of Governor Pitt, of Madras—grandmother of the Earl of Chatham and great-grandmother of William Pitt—who was a daughter of James Innes of Redhall. The main road from Aberdeen to Inverness crosses the Spey at FOCHABERS Bridge, and passes westward for $1\frac{1}{2}$ mile across the centre of the parish. It is intersected at right angles about the middle by the road from Garmouth up the W side of the Spey. The south-western part of the parish is also traversed for $1\frac{1}{2}$ mile by a reach of the Forres and Keith section of the HIGHLAND RAILWAY system, from which, at Orbliston junction, a branch curves off north-eastwards to Fochabers. Along the first-mentioned road is the little village of Mosstodloch, 2 miles NE of Orbliston junction.

Speymouth is in the presbytery of Elgin and synod of Moray, and the living is worth £206 a year. The parish church or 'Red Kirk,' built in 1732, and thoroughly renovated in 1835, stands on the high ground overlooking the Spey, $\frac{1}{2}$ mile NE of Mosstodloch. Though Garmouth and Kingston are now in Urquhart *quoad civilia*, they remain for ecclesiastical and school board matters in Speymouth, and the School Board has under its charge schools at Garmouth and Speymouth, which, with accommodation for 230 and 173 pupils respectively, had in 1893 attendances of 160 and 87, and grants of £155, 2s. 11d. and £87, 15s. 4d. The only landowner is the Duke of Richmond and Gordon. Pop. (1861) 689, (1871) 634, (1881) 656, (1891) 616.—*Ord. Sur.*, shs. 95, 85, 1876.

Spital House, a mansion in Hutton parish, Berwickshire, $5\frac{1}{2}$ miles W of Berwick-on-Tweed. Its owner is Wm. Compton-Lundie, Esq. (b. 1851; suc. 1871).—*Ord. Sur.*, sh. 26, 1864.

Spittal. See CRAILING.

Spittalfield, a village in Caputh parish, Perthshire, 3 miles N by E of Murtly station and $6\frac{1}{2}$ E by S of Dunkeld, under which it has a post and money order office.

Spittalhaugh, a fine castellated mansion in Linton parish, NW Peeblesshire, near the right bank of Lyne Water, 2 miles SSE of West Linton. Built in 1678, it was greatly enlarged and beautified by the late proprietor, Sir William Fergusson, F.R.S. (1808-77), the eminent surgeon, who received a baronetcy in 1866. His son, Sir James Ranken Fergusson, second Bart. (b. 1835; suc. 1877), is present proprietor.—*Ord. Sur.*, sh. 24, 1864.

Spittal of Glenshee. See GLENSHEE.

Spott, a village and a parish of E Haddingtonshire. The village lies towards the N of the parish, near the left bank of Spott Burn, and 3 miles S by W of the post-town, Dunbar.

The parish is bounded NW and N by Dunbar, E by Dunbar and Innerwick, SW and W by Stenton. Long and narrow, it has an utmost length from N to S of $8\frac{1}{2}$ miles, a varying width of $2\frac{1}{2}$ furlongs and $3\frac{1}{2}$ miles, and an area of 7833 acres. A part of Spott parish that intervened between the parish of Stenton and its larger detached part, and which comprised 90 acres and formed part of Dunbar Common, was transferred by the Boundary Commissioners in 1891 to the parish of Stenton; but, in return, the smaller or Friarsdyke detached portion of Stenton, comprising 340 acres, was added to Spott parish. Spott or Brox Burn and Woodhall or Dry Burn drain the northern portion of the parish north-eastward direct to the German Ocean; whilst BOTHWELL Water flows south-south-eastward along the Innerwick boundary of the southern portion until it falls into the Whitadder at the southern extremity of the parish. Sinking to 85 feet above sea-level in the extreme N, and to 690 feet in the extreme S, the surface is an alternation of hill and dale, part of the LAMMERMUE range; and chief elevations, from N to S, are DOON HILL (582 feet), Spott Dod (608), Black Law (800), Lothian Edge (1157), and Bothwell Hill (1250), the first culminating on the eastern, the last on the south-western, boundary. The predominant rocks are Devonian; and the soil is clayey in some parts, but light and sandy in most. Between 2000 and 3000 acres are in tillage; about 100 are under

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wood; and most of the remainder is hill pasture. On the top of Doon Hill lay David Leslie's Scotch army two days before the battle of DUNBAR (1650); and Cromwell is said to have spent the night after the battle in Spott House. Elsewhere, in three or four localities, are remains or the sites of ancient hill-forts and cairns. A strange fatality appears to have waited on the incumbents of Spott in the 16th century. One, Robert Galbraith, was assassinated by John Carkettle, a Burgess of Edinburgh, in 1544; the next, John Hamilton, a natural son of the first Earl of Arran, became Archbishop of St Andrews, and, captured by Craufurd at DUMBARTON Castle, was hanged at Stirling in 1570; and in the same year a third, John Kello, was executed at Edinburgh for the murder of his wife. He had hanged her in the manse, and then gone and preached 'a more than usually eloquent sermon.' In the annals of witchcraft this parish is famous as almost the last place in Scotland where reputed witches were burnt, for so late as October 1705, the kirk-session records contain this entry: 'Many witches burnt on the top of Spott loan.' Spott House, a little way E by S of the village, is delightfully situated at the SW base of Doon Hill, and commands a beautiful view, away to the Bass Rock and the Isle of May. Partly a building of high antiquity, it was greatly improved soon after its acquisition, about the middle of the first half of the 19th century, by the late proprietor, James Sprot, Esq. (1804-82). Elias de Spot swore fealty to Edward I. in 1296; and later the estate was held by the Humes, Douglasses, Murrays, and Hays. It is now the property of Miss Watt of Speke Hall, Liverpool (J. Small's *Castles and Mansions of the Lothians*, Edinb. 1888). Another mansion, noticed separately, is BOWER House. Spott is in the presbytery of Dunbar and the synod of Lothian and Tweeddale; the living is worth £358. The church, surrounded by fine old trees, is a building of high antiquity, and as restored in 1848 presents a picturesque appearance. The public school, with accommodation for 120 children, had (1898) an average attendance of 78, and a grant of £70, 19s. Valuation (1885) £6641, 18s. (1898) £6002, 14s. 8d. Pop. (1801) 502, (1831) 612, (1861) 555, (1871) 560, (1881) 579, (1891) 475, of whom 253 were females.—*Ord. Sur.*, sh. 33, 1863.

Spottes, a mansion in Urr parish, Kirkcudbrightshire, near the left bank of Urr Water, 4 miles NNW of Dalbeattie. Its owner is Alexander Young-Herries, Esq. (b. 1827; suc. 1872).—*Ord. Sur.*, sh. 5, 1857.

Spottiswoode, a mansion in Westruther parish, Berwickshire, 5½ miles ENE of Lauder. It is partly an old edifice, renovated, altered, and worked into harmony with a fine Elizabethan structure of about the year 1834. A terrace 300 feet long runs round the building, whose central tower rises high above the surrounding trees. The Spottiswoodes of that ilk can be traced back to the latter half of the 13th century, and have included John Spottiswood (1510-85), the superintendent of Lothian in the early period of Presbyterianism; John Spottiswood (1565-1639), Archbishop of St Andrews, who crowned Charles I. at Holyrood, became Lord High Chancellor of Scotland, and wrote the well-known *History of the Church of Scotland*; Sir Robert Spottiswood (1596-1646), Lord President of the Court of Session and Secretary of State, who was beheaded at St Andrews; and John Spottiswood, the first law professor in Edinburgh University, and the author of several works on jurisprudence, who in 1700 repurchased the lands and barony of Spottiswoode, which his grandfather, the Archbishop, had sold to the Bells in 1620. The present proprietor is Alicia Ann Spottiswoode, who succeeded her mother in 1870, and who in 1836 had married Lord John Douglas-Montagu-Scott (1809-60), youngest son of the fourth Duke of Buccleuch. She has composed the music of *Annie Laurie* and other popular songs.—*Ord. Sur.*, sh. 25, 1865.

Spottshall, a seat on Urr river, 4 miles north-east of Castle Douglas, Kirkcudbrightshire.

Spout Bay. See KILTIE BURN.

Spouting Cave, a cave on the west coast of the island

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of Iona, Argyllshire. It has a vertical aperture, and projects a lofty *jet d'eau* at high water in stormy weather.

Spout of Ballagan. See BALLAGAN.

Spout of Garnock. See GARNOCK.

Springbank. See AYTON and GLASGOW.

Springburn. See GLASGOW.

Springfield. See GREYNA.

Springfield, a village on the south-western border of Cupar parish, Fife, near the left bank of the Eden, 3 miles SW of the town of Cupar. It has a station on the Edinburgh and Dundee section of the North British railway, a post office under Cupar, with money order and savings bank departments, a public school, and a *quoad sacra* parochial church. Pop. of village (1861) 524, (1871) 608, (1881) 931, (1891) 748; of *q. s.* parish (1871) 1098, (1881) 1480, (1891) 1430, of whom 93 were in Ceres, 41 in Cults, and 1296 in Cupar parish.—*Ord. Sur.*, sh. 40, 1867.

Springfield, a seat of population, connected with paper-mills, in Lasswade parish, Edinburghshire, on the right bank of the North Esk, 1½ mile SSW of Lasswade village and 3¼ miles SW of Dalkeith. Springfield House, in its vicinity, is a fine mansion in an exquisitely beautiful situation.

Springhill, a mansion in Eccles parish, Berwickshire, near the left bank of the Tweed and the village of Birgham, 4 miles W by S of Coldstream.

Springholm, a village on the mutual border of Urr and Kirkpatrick-Durham parishes, Kirkcudbrightshire, 6 miles NNE of Castle-Douglas. It has a post office under Dalbeattie, and a public school with accommodation for 70 children.

Springkell, a mansion in Kirkpatrick-Fleming parish, Dumfriesshire, near the left bank of Kirtle Water, 4 miles E by N of Ecclefechan, and 2½ NE of Kirtle Bridge station, on the Caledonian railway. Erected in 1734, and greatly enlarged in 1818, it is a fine Grecian edifice, of centre and wings, with beautiful grounds. In 1609 William Maxwell acquired the barony of KIRKCONNELL and Springkell; and his sixth descendant, Sir John Robert Heron-Maxwell, sold the estate of Springkell in 1894 to J. E. Johnston Ferguson, Esq.—*Ord. Sur.*, sh. 10, 1864.

Springwood Park, a mansion in Kelso parish, Roxburghshire, near the right bank of the winding Teviot, 1¼ mile SW of the town. Built in 1756, it figures well in the gorgeous views around Kelso; is surrounded with a finely wooded park; and has an admirable entrance gateway, formed after designs by Gillespie Graham in 1822. It is the seat of Sir George Brisbane Scott Douglas, fifth Bart. since 1786 (b. 1856; suc. 1885).—*Ord. Sur.*, sh. 25, 1865.

Sprouton, a Border village and parish of NE Roxburghshire. The village, a decayed place, stands near the right bank of the Tweed, and close to Sprouton station on the North-Eastern railway, this being 20½ miles SW of Berwick-on-Tweed, 13½ E by N of St Boswells, and 2½ NE of Kelso, under which there is a post and telegraph office.

The parish, containing also Lempitlaw hamlet, 6 miles ESE of Kelso, is bounded N by Eccles in Berwickshire, E by Northumberland, SE and S by Linton, SW by Eckford and Kelso, W by Kelso, and NW by Ednam. Its utmost length from NE to SW, is 5½ miles; its utmost breadth is 3½ miles; and its area is 8731½ acres, of which 96 are water. The TWEED, here a glorious salmon river, sweeps 3½ miles north-eastward along all the Ednam and Eccles boundary; and the lands beside it are low and flat, sinking little below and little exceeding 100 feet above sea-level. The interior is partly a ridgy swell called HADDEN Rig (541 feet), which flanks the low grounds, and partly a parallel vale which here and there is marshy; whilst the southern district is comparatively high, attaining 690 feet near Greenhead, but largely subject to the plough. The soil, a rich loam near the Tweed, degenerates towards Hadden Rig, and improves again towards the S. Trap, sandstone, and limestone have been quarried. Nearly 180 acres are under wood, plantations, mostly of fir;

550 acres are waste; and all the rest of the parish is in tillage. Hadden Stank and Redden Burn were frequent meeting-places of Scotch and English commissioners for settling Border disputes; and Hadden Rig, about the year 1540, was the scene of a defeat of 3000 English horsemen by a body of Scottish troops. One pre-Reformation chapel stood at Hadden, another stood on Sprouston manor; and the burying-ground which surrounded the church of the ancient parish of Lempitlaw is still in use. The Duke of Roxburghe is chief proprietor. Sprouston is in the presbytery of Kelso and the synod of Merse and Teviotdale; the living is worth £329. The parish church, on a gravelly eminence in the middle of the village, was built in 1781, and contains 420 sittings. Three public schools, Hadden, Lempitlaw, and Sprouston, with respective accommodation for 68, 90, and 116 children, had (1893) an average attendance of 38, 64, and 66, and grants of £34, 9s. 6d., £66, 12s. 6d., and £60, 5s. Pop. (1801) 1105, (1841) 1439, (1861) 1305, (1871) 1294, (1881) 1026, (1891) 1006, of whom 542 were females.—*Ord. Sur.*, shs. 25, 26, 1865-64.

Spynie or New Spynie, a parish in the northern part of Elginshire, NW of the town of Elgin. It is bounded N by the parishes of Duffus and Drainie, E and SE by the parish of St Andrews-Lhanbryd, SSE and S by the parish of Elgin, SW by the parish of Alves, and NW by the parish of Duffus. On the N the boundary follows for $3\frac{1}{2}$ miles the drainage canal in the old basin of the Loch of Spynie, and its continuation westward to near Mid-Kintrae. On the S it follows the present and former course of the river Lossie, from the bend at Roy's Pot, NE of the town of Elgin, 3 miles upwards to Aldroughy, and thence passes still farther to the W for $\frac{1}{2}$ mile along the Monaughty Canal. The old course of the Lossie just mentioned extended from the bridge at Bishopmill along the S side of Lossie Green and the Borough Briggs Lands, rejoining the present course at The Haugh. Elsewhere the line is artificial. The length of the parish, from E to W, through the line of the farms of Westfield and Spynie, is $5\frac{1}{2}$ miles; the width, from N to S, through the church, is fully $2\frac{1}{2}$ miles; and the area is 5971·512 acres, of which 25·856 are water. A ridge of high land, running from ENE to WSW, near the S side of the parish, attains an altitude of 300 feet above sea-level at the top of Quarrywood Hill, the highest point in the parish. From this ridge there is a slope towards the S to the Lossie, and a longer one towards the N to the Spynie Canal, the flat ground along which in the NE is but very little above sea-level. The greater portion of the ridge just mentioned is covered with fine woods, that on the SW side, about 1 mile to the W of Elgin, being covered with a stretch of natural oak. This is the Oak Wood, and the whole of the rest of the western portion is known as Quarrywood. The eastern portion is the Hill of Spynie. Of the whole surface of the parish, about 1400 acres are under wood. The rest, except about 200 acres, is almost entirely arable, the soil varying from rich clay in the great northern hollow to a stony loam on the higher grounds. The subsoil is clay. The underlying rocks along the S and up to and beyond the top of Quarrywood Hill are Old Red Sandstone; but from a short distance beyond this, down along the hollow, as well as all through the Hill of Spynie, they belong to the rocks which have figured so prominently in geological discussion since about 1857 as 'the Elgin Sandstones.' (See ELGINSHIRE.) Boulders of rock of Jurassic age also occur scattered about the valley, chiefly in the NE. There is a small patch of limestone in the extreme E near the Palace of Spynie. Both sandstone deposits are extensively quarried for building stone, and in some places for millstones. The rock is generally of excellent quality, and varies in colour from a very light yellowish grey to red and brown. The drainage is carried off by the Lossie and the canals already mentioned, and rivulets flowing to them. Along the Lossie and on the slope northwards from Quarrywood Hill there are several well-marked river and lake terraces.

A considerable strip of land along the northern and north-eastern part of the parish was formerly covered by the waters of the Loch of Spynie. It is possible that within the historic time a shallow arm of the sea extended all along the valley of Roseisle and Duffus, from BURGHEAD to LOSSIEMOUTH; but whether this was so or not, it is certain that, long after the western portion of the hollow had become dry land, the eastern portion was occupied by a sheet of water communicating with the sea. In the NW of Spynie parish are three farms bearing the name of Kintrae, from Celtic words meaning 'the top of the tide.' In 1397 there is mention of a harbour at Spynie; and in 1451, when the lands were erected into a Regality, the right 'of harbour' was granted. The loch must at this time have been connected with the sea by the Lossie, which then flowed through it. Hollingshed, in his translation of Boece, speaks of it as 'a lake named Spynie, wherein is exceeding plentie of swans,' which were drawn thither by the abundance of an herb called 'swangirs,' which, once planted anywhere, could not be again rooted out, and which was not entirely beneficial in its results, 'for albeit that this lake be five miles in length, and was sometime within the remembrance of man verie well stocked with salmon and other fish, yet after that this herbe began to multiplie upon the same, it became so shallow that one may now wade through the greatest part thereof, by means whereof all the great fishes there be utterly consumed.' Underneath the present surface of the drained bed, evidence of the former connection of the lake with the sea may be found in a deposit of sandy mud, containing shells of oysters and a number of other marine molluscs. The Bishops of Moray were almost sole proprietors of the loch; and after the lake became shallow, they began, about the close of the 15th century, to try to drain it by deepening the bed of the Lossie, and by this means the water was kept down till after the Reformation, when, under the lay proprietor, the works were neglected and the waters increased. In 1609 the Episcopal Bishop Douglas carried out works, excluding the Lossie, and ran drains into the basin of the loch; but the troublous times of the Covenant were at hand, and so little more was done till 1779,—the loch being then about 5 miles in length and at its widest part 1 mile in breadth, and covering an extent of about 2500 acres,—when extensive works were carried out by Messrs James and Alexander Brander of Pitgavenny, which had the effect of reclaiming over 1100 acres of land. Their operations were stopped by Sir William Gordon of Gordons town, who claimed the whole loch as his property, and the drains being neglected, the waters again began to rise. In 1808-12 a canal recommended by Telford was carried through the whole loch and on to the sea at Lossiemouth, where there were sluices for shutting out the tide. These works, which had cost the large sum of £12,740, were entirely destroyed by the great flood of 1829, and the waters again increased, till in 1860 the loss to proprietors and farmers had become so great that fresh operations were undertaken. The great drain was restored and deepened, and new self-acting sluices erected. These are four in number, and each consists of a mass of iron weighing 18 hundred-weights, and very delicately poised and tightly fitted into a frame, so that they shut with the slightest pressure, and exclude all sea-water. The cost of the whole works was about £8000, but the result has been highly satisfactory, and the bed is now thoroughly dry, except a small portion that has been retained for sporting purposes, near Pitgavenny. This, which is cut off from the main canal by a strong bank of puddled clay, is about 110 acres in extent, and is in the parish of St Andrews.

On the south-eastern margin of the old lake-basin stand the ruins of the Episcopal Palace of Spynie. The buildings, which have no doubt been the work of several successive bishops, were ranged round a quadrangle, about 50 yards in length by 44 in breadth, with a tower at each corner. The sides were occupied by buildings or protected by connecting curtain walls. A postern gate on the N led to the loch, and the principal

ordinary gateway was on the E side. The shield above it bears the arms of Bishop John Innes. The principal feature in the ruins now is the great tower at the SW corner, 60 feet high, 50 long, and 40 wide, and the outer walls are between 9 and 10 feet thick. The inner wall to the court is very much thinner, being only between 2 and 3 feet thick. The windows, which must have been unusually large, have all been protected by strong iron bars. The lower part is occupied by vaults, one of which at least seems to have been used as a dungeon. The first floor was the great hall, and above were other large rooms, with vaulted closets and passages. One very small bedroom is associated with the name of Queen Mary, who 'supped and slept' here on 17 September 1562. At the corners were cape houses. This tower is known, from its builder, as 'Davie's Tower,' it being the practical reply made by Bishop David Stewart (1461-76) to a threat of the Gordons. The Earl of Huntly and his kin having been excommunicated, threatened that they would come, and pull the bishop out of his pigeon holes at Spynie, to which the bishop replied that he would soon build a house, out of which the Earl and all his clan should not be able to pull him, and this tower was the result. It is a magnificent testimony to the worthy prelate's architectural taste. On the S wall, on the outside, are the arms of Bishops David and Andrew Stewart, and of Patrick Hepburn, whose nephew, the Earl of Bothwell (1536-78), received an ill training here. On the S side of the court was a spacious tennis-court, and parallel to it the chapel. On the E were the kitchen and other offices, and round the precinct were gardens and an orchard. The castle passed in 1590 to Alexander Lindsay, Lord Spynie, who never lived in it; but he re-sold it to the Crown in 1606. After Bishop Guthrie was deposed in 1638 he tried to keep possession of this palace, which he had garrisoned, but when he was attacked by General Munro in 1640 he was compelled to surrender; and when the armies of Montrose and the Covenanters were marching and counter-marching in the north, the building was held by Innes of Innes and Grant of Balandalloch in the Covenanting interest. After the Restoration it became again the Episcopal residence, the last bishop who resided in it being Colin Falconer (1680-86), who died here. After the Revolution the building passed to the Crown, and it was allowed to fall to ruin—all removable portions being carried off by the people of the district. About 1825 more attention began to be given to its condition, but the mischief had been done. In 1840 it was sold to the late Earl of Fife, and is now in the possession of his son the Duke of Fife. In 1590 Spynie gave the title of Baron to Alexander Lindsay, fourth son of David, ninth Earl of Crawford, but the peerage became dormant on the death of George, third peer, in 1672.

To the SW of the Palace is the old churchyard, in which stood the church dedicated to the Holy Trinity, which in the early part of the 13th century served at times as the cathedral of the diocese of Moray (see ELGIN). This remained the site of the parish church down to 1736, but the position being inconvenient, the church was in that year removed to its present site near the centre of the western portion of the parish, $2\frac{1}{2}$ miles NW of Elgin; and it was this that gave rise to the name of New Spynie given to the parish in connection with school board, parochial board, and registration matters. The few houses beside the church constituting the kirkton are spoken of as Quarrywood. The new church is a very plain building, with belfry and doorway taken from the old church, of which no portion is now left. The former bears the date 1723. The bell was also brought from the old church, and has the inscription, 'This Bell—For the Pearis of Spynie. Me Feict, 1637. Soli Deo Gloria Michel Borgertwys.' There seems to have been a Culdee church in the NW corner of the parish. It is referred to in the beginning of the 13th century as *veterem ecclesiam de Kyntira*. No trace of the building has remained for a long time, but the churchyard attached, which stood in the centre of

the eastern margin field called Chapelfield, on the home farm of Westfield, was preserved until a comparatively recent date. On the S side of Quarrywood Hill are the remains of a Celtic hill strength, known locally as the Danish Camp.

The great main road from Aberdeen to Inverness passes through the southern portion of the parish for $2\frac{1}{2}$ miles, and the roads from Elgin to Lossiemouth, Hope-man, and Burghhead, also intersect it in the E and centre. There are a large number of good district roads, and the Elgin and Lossiemouth branch of the Great North of Scotland railway system passes for $\frac{1}{2}$ mile across the eastern end of the parish. In the eastern portion of the parish is a large brick and tile work. The only mansion is Westfield. Spynie includes the Bishopmill suburb of the town of Elgin. It is in the presbytery of Elgin and synod of Moray, and the living is, worth £181 a year. The parish church, built in 1736 and repaired in 1833, contains 400 sittings. A school in Bishopmill is under the Elgin school board; under that of Spynie, New Spynie school, beside the church, with accommodation for 102 pupils, had in 1893 an attendance of 50, and a grant of £45, 11s. 3d. The principal proprietor is the Duke of Fife. Pop. (1801) 843, (1831) 1121, (1861) 1600, (1871) 1612, (1881) 1620, (1891) 1708, of whom 792 were males and 916 females, while 447 were in the landward part of the parish. Houses (1891) inhabited 364, uninhabited 29, and being built 3. See also R. Young's *Parish of Spynie* (Elgin, 1871).—*Ord. Sur.*, sh. 95, 1876.

Spyonbeg and Spyonmore, two mountains, 1155 and 1455 feet high, on the NE coast of Mull, Argyllshire.

Stablestone, a place with a public school, in Douglas parish, Lanarkshire.

Stack, a fine loch, 3 miles long by 2 in breadth, and a mountain, 2364 feet high, overhanging the loch, in Eddrachillis parish, Sutherlandshire. The loch contains salmo-ferox, good-sized loch trout, and sea-trout, also salmon and char. It is one of the finest fishing lochs in Sutherlandshire, and its scenery is very grand.

Staffa (Scand. *Staffhi* and *ey*, 'the island of pillars'), a small uninhabited island of the Inner Hebrides, off the W coast of Mull, in the county of Argyll, in the civil parish of Kilninian and Kilmore, and in the *quoad sacra* parish of Ulva. It is $3\frac{1}{2}$ miles SW of the island of Ulva, 6 N by E of Iona, and the same distance from the nearest point of Mull at Gribon; and 54 by steamer W of Oban. In shape the island is an irregular oblong, with a length of less than $\frac{1}{2}$ mile, and an average width of slightly more than $\frac{1}{4}$ mile, and the area is 71·424 acres. The surface is an uneven table-land with cliffs varying in height, dropping to the sea all round. The greatest height is in the SW, and is about 144 feet. The soil is good, and produces excellent pasture for the sheep with which the island is stocked. The black cattle that were once kept here became very wild and savage, and had to be removed. At one time a solitary shepherd and his family lived all the year round on Staffa, but he begged to be removed, as they could not bear the terrifying effect of the dismal hollow roar made by the sea through the island caverns. Staffa appears to have been very little noticed up till near the end of the 18th century, when Sir Joseph Banks, after visiting it in 1772, published a full account of its marvels in the second volume of Pennant's *Tour in Scotland*. The ship in which Sir Joseph was sailing to Iceland put into a port in Mull, and at the house of Mr Maclean of Mull he met an Irish gentleman, who told him that the day before he had seen what was, in his opinion, one of the greatest wonders of the world, though none of his Highland acquaintances seemed to have ever had their attention drawn to it. Excited by this account of the marvels to be seen, Banks made an expedition to the island, and the result was the account in Pennant's *Tour*. Since that time, and more especially since the introduction of steam navigation, Staffa has enjoyed abundant celebrity, and been visited by multitudes of admirers. The day's sail by swift steamer from Oban to Staffa and Iona is now, except in rough weather, one

of the regular tourist trips during the summer months. The steamer allows passengers a short time on shore to see Fingal's Cave, but those who wish to examine the island more leisurely and thoroughly must take boat from either Ulva or Iona. On 19 Aug. 1847 the Queen and Prince Albert were here on their way to ARDVERIKIE. 'We anchored,' says Her Majesty, 'close before Staffa, and immediately got into the barge with Charles, the children, and the rest of our people, and rowed towards the cave. As we rounded the point the wonderful basaltic formation came in sight. The appearance it presents is most extraordinary; and when we turned the corner to go into the renowned *Fingal's Cave*, the effect was splendid, like a great entrance into a vaulted hall; it looked almost awful as we entered, and the barge heaved up and down on the swell of the sea. It is very high, but not longer than 227 feet, and narrower than I expected, being only 40 feet wide. The sea is immensely deep in the cave. The rocks under water were all colours—pink, blue, and green—which had a most beautiful and varied effect. It was the first time the British standard with a Queen of Great Britain, and her husband and children, had ever entered *Fingal's Cave*, and the men gave three cheers, which sounded very impressive there. We backed out, and then went on a little farther to look at the other cave, not of basaltic formation, and at the point called *The Herdsman*.' It is seldom, indeed, that in these turbulent seas boats can enter the cave itself comfortably as the royal boat did on this occasion, but it is not often that the sheltered landing near the centre of the E side is impracticable, as it is on the lee of the prevailing winds. The structure of the island shows a lower stratum of volcanic agglomerate, above which rises a black or dark brown compact columnar basalt, which is again surmounted by another basalt with small columns here and there, but generally amorphous. To the S of the landing-place the objects of chief interest which challenge the visitor's notice and admiration are, first, the Scallop or Clamshell Cave; second, the rock called Buachaille or the Herdsman; third, the Causeway and the Great Face or Colonnade at the SE corner of the island; fourth, Fingal's or the Great Cave on the S side; fifth, the Boat Cave; and sixth, the Cormorant's or Mackinnon's Cave at the SW corner. There are other caves in two bays on the W side of the island, and others again at the N end, and between the N end and the landing-place, but those latter groups are remarkable neither for beauty nor size, though in some of them the air, suddenly compressed by the inrolling surge, produces a sound resembling that caused by the discharge of a cannon. The form of the basaltic pillars, of which the whole of the coast and of the arches, sides, and floors of the caves are composed, is finely perfect; and the spots on the surface of the island which are bare of soil, as well as the flatter parts of the rock at the bottom of the coast-line of cliffs, show in many places the ends of the columns so regularly arranged as closely to resemble a tessellated pavement. It is this architectural regularity of structure that gives the island and its caves their particular interest and attraction, and forms one of the leading features which strike and impress a visitor with a feeling of awe and wonder. It was this feeling that prompted the first of Wordsworth's three sonnets on the *Cave of Staffa*.—

'We saw, but surely, in the motley crowd,
Not one of us has felt the far-famed sight;
How could we feel it? each the other's blight,
Hurried and hurrying, volatile and loud.
O for those motions only that invite
The Ghost of Fingal to his tuneful Cave
By the breeze entered, and wave after wave
Softly embosoming the timid light!
And by one Votary who at will might stand
Gazing and take into his mind and heart,
With undistracted reverence, the effect
Of those proportions where the almighty hand
That made the worlds, the sovereign Architect
Has deigned to work as if with human Art!'

The highest point of the coast cliffs is between Fingal's Cave and the Boat Cave, where they rise to 112 feet

above high-water mark. To the W of this they become lower, and at Mackinnon's Cave are only 84 feet. At the N end there is a rocky shore rising but a very short distance above sea-level.

'At the Scallop or Clamshell Cave,' says Macculloch, 'the columns on one side are bent, so as to form a series of ribs, not unlike an inside view of the timbers of a ship. The opposite wall is formed by the ends of columns bearing a general resemblance to the surface of a honeycomb. This cave is 30 feet in height and 16 or 18 in breadth at the entrance; its length being 130 feet, and the lateral dimensions gradually contracting to its termination. The inside is uninteresting. The noted rock Buachaille, the Herdsman, is a conical pile of columns, about 30 feet high, lying on a bed of curved horizontal ones visible only at low water. The Causeway here presents an extensive surface which terminates in a long projecting point at the eastern side of the Great Cave. It is formed of the broken ends of columns, once continuous to the height of the cliffs. This alone exceeds the noted Giant's Causeway, as well in dimensions as in the picturesque diversity of its surface, but it is almost neglected, among the more striking and splendid objects by which it is accompanied. The Great Face is formed of three distinct beds of rock of unequal thickness, inclined towards the east in an angle of about 9 degrees. The thickness of the lowest bed at the western side is about 50 feet; but in consequence of the inclination, it disappears under the sea, not far westward of the Great Cave.' The second—the columnar bed—is of unequal thickness, being 36 feet at the western side, and 54 where the water first prevents its base from being seen. The unequal thickness of the upper bed produces the irregular outline of the island. In respect of regularity the pillars fall somewhat short of those of the Giant's Causeway. 'Very often they have no joints; sometimes one or more may be seen in a long column; while in other places they are not only divided into numerous parts, but the angles of the contact are notched. They are sometimes also split by oblique fissures, which detract much from the regularity of their aspect. These joints are very abundant in the columns that form the interior sides of the Great Cave, to which, indeed, they are chiefly limited; and it is evident that the action of the sea, by undermining these jointed columns, has thus produced the excavation; as a continuation of the same process may hereafter increase its dimensions. The average diameter is about two feet; but they sometimes attain to four. Hexagonal and pentagonal forms are predominant; but they are intermixed with figures of three, four, and more sides, extending even as far as to eight or nine, but rarely reaching ten.' At the Herdsman the sides of the hexagonal pillars are not more than 4 inches, giving 2 feet as the circumference.

Round a projecting corner of cliff from the Great Colonnade is the magnificent Fingal's Cave, worthy in the grandeur of its association with the grandest of the Ossianic heroes:—

'Where as to shame the temples deck'd
By skill of earthly architect,
Nature herself, it seem'd, would raise
A Minster to her Maker's praise!
Not for a meaner use ascend
Her columns, or her arches bend;
Nor of a theme less solemn tells
That mighty surge that ebbs and swells,
And still, between each awful pause,
From the high vault an answer draws,
In varied tone prolong'd and high,
That mocks the organ's melody.'

The height from the top of the arched roof to the top of the cliff is 30 feet, and downwards to the mean level of the sea 66 feet. The pillars on the western side are 36 feet high, and those on the eastern side only 18, though the upper ends are nearly in the same horizontal line. The breadth at the entrance is 42 feet, and this is maintained till within a short distance of the end of the cave, where it is reduced to 22 feet. The extreme length is 227 feet. At the base of the cliff a broken column with another beside it has obtained the name

of 'Fingal's Chair.' Near the cave one side of the hexagon of one of the columns measures 2 feet, giving a total girth of 12 feet. The regularity of the arch and entrance is best seen from the sea at some little distance, but good views are also to be obtained from the point of the Causeway at low water. A path, now rendered more secure by a strong rope passing through iron supports, leads along the eastern side to near the end; but care requires to be taken, as the rock is damp and slippery, and occasionally, though very very rarely, enormous tidal waves come rushing in. A party of tourists were overtaken, inside, by one of these in August 1884, and three of them swept away and drowned. The columns extend inward along the sides of the cave, and the ceiling, which is divided by a longitudinal fissure, varies in different places. At the outer portion of the cave the roof consists of volcanic ash, in the middle of broken ends of columns, and at the end portions of both of these rocks come in. As the sea always remains of considerable depth, even at ebb tide having 25 feet of water, 'the only floor of this cave is the beautiful green water, reflecting from its white bottom those tints which vary and harmonise the darker tones of the rock, and often throw on the columns the flickering lights which its undulations catch from the rays of the sun without.'

'Fingal's Cave,' says Wilson in his *Voyage Round the Coasts of Scotland*, 'is indeed a most magnificent example of Nature's architecture. A vast archway of nearly 70 feet in height, supporting a massive entablature of 30 feet additional, and receding for about 230 feet inwards—the entire front, as well as the great cavernous sides, being composed of countless complicated ranges of gigantic columns, beautifully jointed, and of most symmetrical, though somewhat varied forms—the roof itself exhibiting a rich grouping of overhanging pillars, some of snowy whiteness, from the calcareous covering by which they have become encrusted—the whole rising from and often seen reflected by the ocean waters—forms truly a picture of unrivalled grandeur, and one on which it is delightful to dwell even in remembrance. How often have we since recalled to mind the regularity, magnitude, and loftiness of those columns, the fine overhanging cliff of small prismatic basalt to which they gave support, worn by the murmuring waves of many thousand years into the semblance of some stupendous Gothic arch,

“Where through the long-drawn aisle and fretted vault”

the wild waves ever urge their way—and the receding sides of that great temple, running inwards in solemn perspective, yet ever and anon, as ocean heaves and falls, rendered visible in its far sanctuary by the broad and flashing light, reflected by the foaming surges sweeping onwards from below! Then the broken and irregular gallery which overhangs that subterranean flood, and from which, looking upwards and around, we behold the rich and varied hues of red, green, and gold which give such splendid relief to the deep and sombre coloured columns—the clear bright tints which sparkle beneath our feet from the wavering yet translucent sea—the whole accompanied by the wild yet mellow and sonorous moan of each successive billow, which rises up the sides or rolls over the finely formed crowns of the lowlier and disjointed pillars—these are a few of the features of this exquisite and most singular scene which cannot fail to astonish the beholder.'

The Boat Cave, so called from being accessible only by sea, is a long mine-gallery-like passage, 12 feet wide, 16 high, and 150 deep, hollowed out in the bottom agglomerate. It owes its interest entirely to the range of pillars that overhangs it. The Cormorant's, Scart's, or Mackinnon's Cave is easy of access; it terminates in a gravelly beach on which a boat may be drawn up. It is noteworthy for the overhanging pillars, as well as for the effect its wide dark entrance produces when seen from the sea to the SW of the island. The height of the entrance is 50 feet, and the breadth 48, and these dimensions are maintained almost the same to the very

end, which is 224 feet from the mouth. The caves and cliffs are frequented by large numbers of sea-birds of different kinds, of which the kittiwakes and the razor-backed auk rear their young in Fingal's Cave. See also Graham's *Staffa and Iona Described and Illustrated*.

Staffin. See SKYE and STEINSCROLL.

Stair, a parish of Kyle district, Ayrshire, whose church is beautifully situated near the left bank of the river Ayr, $1\frac{1}{2}$ mile S of Tarbolton station, and $\frac{3}{4}$ miles ENE of Ayr. There is a post office of Stair under Tarbolton. The parish, formed out of Ochiltree in 1673, is bounded NW and N by Tarbolton, NE and E by Manchain, SE and S by Ochiltree, and SW and W by Coylton. Its utmost length, from NE to SW, is $5\frac{1}{2}$ miles; and its utmost breadth $2\frac{1}{2}$ miles. Prior to 1891 the parish had two detached portions. Of these, one, containing Trabochburn farm and completely surrounded by Ochiltree, was very small, only 6 by $2\frac{1}{2}$ furlongs, and comprised 119 acres; the other, containing DRONGAN station and adjoining Ochiltree and Coylton, had an utmost length from N by W to S by E of $2\frac{1}{2}$ miles, and a breadth varying between 1 furlong and $2\frac{1}{2}$ miles, and comprised 1821 acres. The Drongan portion was transferred by the Boundary Commissioners in the year mentioned to the parish of Ochiltree, and the Trabochburn portion was united to the parish by incorporating the intervening portion of Ochiltree parish. LUGAR Water flows 1 mile north-north-eastward along all the eastern boundary to the river Ayr, which itself winds $7\frac{1}{2}$ miles west-north-westward and south-westward along all the north-eastern, northern, and north-western boundary, though the point where it first touches and that where it quits the parish are but $4\frac{1}{2}$ miles distant as the crow flies. The scenery along its deep gorge is very beautiful, especially at Barksimming. The Water of COYLE traces all the western boundary of the larger detached portion. The surface undulates gently, at no point sinking much below 200 feet above sea-level, at none much exceeding 300 in the main body or 400 in the detached portion. Sandstone of various qualities, some of them well adapted for building, is plentiful, and has long been quarried; coal has also been largely mined; the celebrated Water-of-Ayr (now 'Tam o' Shanter') stone has been quarried on the Dalmore estate since 1789; and plumbago or black-lead was worked between 1830 and 1850. The soil, in the hollows or small vales along the streams, is generally sandy loam; but the rest of the parish consists of stiff clay. Most of the lands of the parish are disposed for tillage or the dairy; but more than 700 acres are under wood. The chief antiquities are remains of an old tower at Traboch. Stair House, near the church, is an antique corbie-stepped building, with round towers at the angles. In 1450 William de DALRYMPLE acquired the lands of Stair-Montgomery by marriage with Agnes Kennedy; and their eighth descendant, James Dalrymple (1619-95), was created a baronet in 1664, and Viscount Stair in 1690. His son John (1648-1707), of Glencoe notoriety, in 1703 was raised to the earldom of Stair; and his son and successor John (1679-1747), best known as Field-Marshal Stair, is said, as a mere boy, to have accidentally shot his elder brother in a room on the ground floor of Stair House. The estate was disposed of by the Stair family, but was repurchased about the year 1826. Dalmore House is a fine castellated edifice of 1880-81; and another mansion is BARKSIMMING, noticed separately. Stair is in the presbytery of Ayr and the synod of Glasgow and Ayr; the living is worth £328. The church, at the village, which has only a few dwellings, is a Gothic edifice of 1864, and contains 400 sittings. The public school, with accommodation for 191 children, had (1893) an average attendance of 184, and a grant of £177, 11s. 6d. Valuation (1885) £7834, 16s., (1894) £11,278, 10s. Pop. (1801) 563, (1841) 823, (1861) 743, (1871) 784, (1881) 928, (1891) 1289.—*Ord. Sur.*, sh. 14, 1863.

Standrig. See WALLACESTONE AND STANDRIG.

Stane, a village in Cambusnethan parish, Lanarkshire, on the left bank of South Calder Water, in the

vicinity of Shotts Ironworks, 5 furlongs SE of Shotts station, and $6\frac{1}{2}$ miles ENE of Wishaw. It dates from ancient times, and is now associated chiefly with the Shotts Ironworks and with extensive collieries. Pop. (1871) 937, (1881) 911, (1891) 1017.

Stanely Castle, an ancient seat of the Danzielstons, in Abbey-Paisley parish, Renfrewshire, at the northern base of the Braes of GLENIFFER, 2 miles SSW of Paisley. A massive corbelled tower, 40 feet high, it is in a state of fair preservation, and since 1837 has been engirt by a reservoir of the PAISLEY waterworks.—*Ord. Sur.*, sh. 30, 1866.

Stanhope Burn. See DRUMMELZIER.

Stanley, a Perthshire village in Auchtergaven and Redgorton parishes, on the right bank of the winding Tay, 5 furlongs S by W of Stanley Junction on the Caledonian railway (1847), this being $8\frac{1}{2}$ miles SE of Dunkeld, $8\frac{1}{2}$ SW of Coupar-Angus, and $7\frac{1}{2}$ N by W of Perth. It owes its origin to extensive cotton-mills, erected in 1785 under the auspices of the celebrated Arkwright; and it has shared the fluctuating fortunes of these mills, which were stopped from 1814 to 1823, and then acquired by Dennistoun, Buchanan, & Co., who spent £160,000 on their improvement, and employed 1200 workers. The cotton famine of 1862 occasioned another stoppage, but since 1876 the works have greatly revived under the new and able management of Col. Sandeman. They are driven by water-power, brought from the Tay with a fall of 25 feet, and led to the mills by a tunnel 800 feet long. The situation of Stanley, on a considerable elevation above the river, is pleasant and salubrious. There are two places of worship in the town—the one Established, the other Free. The former, a large and handsome edifice, with 1150 sittings, was erected in 1828 at a cost of over £5000, and was raised to *quoad sacra* status in 1877. Its tower, 85 feet high, forms a conspicuous object to the view of the surrounding country. A temperance hall, with accommodation for 200 persons, was built in 1880; and Stanley besides has a post office, with money order, savings bank, and telegraph departments, gasworks (for the mills only), a public library, and a public school. Stanley House,* to the E of the village, is an ancient mansion dating from the first half of the 15th century, but greatly altered at various times during the 19th century, having been burnt in 1887, but since rebuilt. Sheltered to the N by a crescent-shaped hill, which rises 135 feet above the Tay, it stands on a beautiful haugh, surrounded by grand old trees, including a broad beech avenue. It was once a seat of the Lords Nairne, and has memories of the Jacobite third lord, who escaped from its dining-room after the '45; whilst 'Lady Nairne's Tea-House' still crowns the top of the hill. At Stanley House, too, John Leech drew for *Punch* 'Mr Briggs landing his first salmon' in his arms after his tackle had been broken. The present proprietor, Col. Frank Stewart Sandeman, is a grand-nephew of the poetess, Lady Nairne. Pop. of village (1841) 1945, (1851) 1769, (1861) 1274, (1871) 932, (1881) 1030, (1891) 1052, of whom 611 were females, and 774 were in Auchtergaven parish; of *q. s.* parish (1891) 1304, of whom 829 were in Auchtergaven, 102 in Kinclaven, and 373 in Redgorton. Houses in village (1891) occupied 276, vacant 17.—*Ord. Sur.*, sh. 43, 1868. See also CAMPSIE, INCHEBRIE, AUCHTERGAVEN, and pp. 511-516 of *Thos. Hunter's Woods and Estates of Perthshire* (Perth, 1883).

Stanley Burn. See BURNISLAND.

Start Point, a headland at the eastern extremity of Sanday Island in Orkney, $2\frac{1}{2}$ miles SE of Tafts Ness, 5 SSE of the southern extremity of North Ronaldshay, and 11 NE of Papa Stronsay. It terminates a narrow peninsula $1\frac{1}{2}$ mile long; was formerly, with that peninsula, the scene of numerous shipwrecks; and was crowned,

in 1802, by a lofty stone beacon, transmuted, in 1806, into a lighthouse, which now shows a fixed red light, visible at a distance of 14 nautical miles.

Staxigoe, a fishing village in Wick parish, Caithness, $2\frac{1}{2}$ miles NE of Wick town. A place of some antiquity, it retains, in a state of tolerable preservation, two store-houses which were used by the Earls of Caithness for the reception of grain in the times when rents were paid in kind, and has a public school and a fairly good natural boat harbour.

Steel. See MONKS BURN.

Steele-Road Station. See CASTLETON, Roxburghshire.

Steilston, a place with a public school, in Holywood parish, Dumfriesshire.

Steinscholl, a hamlet in Kilmuir parish, and a *quoad sacra* parish, partly also in Snizort parish, Isle of Skye, Inverness-shire. The hamlet, called sometimes Staffin, lies on the E coast of Trotternish peninsula, near the head of Staffin Bay, 18 miles N of Portree. It has a post and money order office (Staffin) under Portree, a public school, and an inn. The *quoad sacra* parish, consisting principally of the ancient parish of Kilmartin, which now is united to Kilmuir, was constituted by the ecclesiastical authorities in 1833, and reconstituted by the Court of Teinds in 1847. It is in the presbytery of Skye and the synod of Glenelg; the stipend is £147, with a manse. The parochial church was built by Government, and contains 350 sittings. In 1892 the church and manse were repaired. There is a branch church of Kilmuir Free Church at Steinscholl, Eastside. Pop. of *q. s.* parish (1871) 1228, (1881) 1314, (1891) 1261, of whom 15 were in Snizort.

Stemster, a hamlet in Bower parish, Caithness-shire, with a public school having accommodation for 118 children.

Stemster House. See BOWER.

Stenhouse, a hamlet in Liberton parish, Edinburghshire, on Burdiehouse Burn, $\frac{1}{2}$ mile NW of Gilmerton.

Stenhouse, a mansion in Larbert parish, Stirlingshire, in the northern vicinity of Carron Ironworks, $1\frac{1}{2}$ mile E by N of Larbert station. Built in 1622, it has the form of two sides of a rectangle, with turrets at its five external angles. William Bruce, second son of Sir Alexander Bruce of Airth, in 1611 obtained from his father a charter of the lands of Stenhouse. He was created a baronet in 1629; and his seventh descendant is Sir William Cunningham Bruce, ninth Bart. (b. 1825; suc. 1862). The estate now belongs to J. B. Sheriff, Esq. of Carronvale.—*Ord. Sur.*, sh. 31, 1867.

Stenhousemuir, a small town in Larbert parish, Stirlingshire, 3 furlongs NE of Larbert station, and 3 miles NNW of Falkirk. It presents an orderly and pleasant appearance; consists chiefly of one-storey and two-storey houses, many of them with gardens attached; has a post office, with money order, savings bank, and telegraph departments under Larbert, a mission hall, and a Free church; and adjoins the large common on which the Falkirk trysts have been held since 1785. Pop. (1841) 1206, (1861) 1392, (1871) 1872, (1881) 2617, (1891) 3718, of whom 1952 were males and 1766 females.—*Ord. Sur.*, sh. 31, 1867.

Stenness, an Orkney parish, whose church stands near the SE shore of the Loch of Stenness, $5\frac{1}{2}$ miles NE of Stromness and $10\frac{1}{2}$ W by N of Kirkwall, under which there is a post office. It is bounded SE and S by Orphir, W by the Bay of Ireland, NW by the Loch of Stenness and Sandwick, N by Harray, and NE by Firth, to which last it is *quoad civilia* united. Its utmost length, from E to W, is $5\frac{1}{2}$ miles; and its utmost breadth, from N to S, is $4\frac{1}{2}$ miles. Several burns drain the interior to the Loch of Stenness or the Bay of Ireland; and the surface, largely consisting of moorland and heathy ridges, attains a maximum altitude of 514 feet above sea-level at a point $1\frac{1}{2}$ mile S by E of Stenness church. The Loch of Stenness consists of two portions—upper and lower, or northern and south-western. The upper, called also the Loch of Harray, extends $4\frac{1}{2}$ miles south-south-eastward, and varies in

* So named about the beginning of the 18th century, after Lady Amelia Sophia Stanley, daughter of the Earl and the famous Countess of Derby, and herself Marchioness of Athole. Her fourth son, Lord William Murray, in 1683 succeeded his father-in-law as second Lord Nairne.

width between 3 furlongs and $1\frac{1}{2}$ mile; the lower extends $3\frac{1}{2}$ miles south-eastward, and has a maximum width of $1\frac{1}{2}$ mile. There are boats on the loch, which contains abundance of sea-trout, yielding capital sport in September especially. Hugh Miller, in his *Foot-prints of the Creator* (1849), describes the Loch of Stenness as 'a large lake about 14 miles in circumference, bare and treeless, like all the other lochs of Orkney, but picturesque of outline, and divided into an upper and a lower sheet of water by two long narrow promontories, that jut out from opposite sides, and so nearly meet in the middle, as to be connected by a thread-like line of road, half mound, half bridge, and known as the Bridge of Brogar.' 'The Loch of Stennis,' says David Vedder, the sailor-poet of Orkney, 'is a beautiful Mediterranean in miniature.' It gives admission to the sea, the Bay of Ireland, by a narrow strait, crossed like that which separates the two promontories in the middle by a long rustic bridge, the Bridge of Waith. In consequence of this peculiarity the lower division of the lake is salt in its nether reaches, and brackish in its upper ones, while the higher division is merely brackish in its nether reaches, and fresh enough in its upper ones to be potable. Viewed from the E, in one of the long clear sunshiny evenings of the Orkney summer, it seems not unworthy the eulogy of Vedder. There are moory hills and a few rude cottages in front, and in the background, some 8 or 10 miles away, the bold steep mountain masses of Hoy; while on the promontories of the lake, in the middle distance, conspicuous in the landscape, from the relief furnished by the blue surrounding waters, stand the tall grey obelisks of Stenness.' These lichen'd 'Standing Stones of Stenness' are second of their kind in Britain to those only of Stonehenge. They occur in two groups—the smaller (composed, however, of the larger stones) on the south-eastern peninsula, and the larger or 'Ring of Brogar' on the north-western. The smaller, 104 feet in diameter, with an outside ditch 50 feet in width, originally consisted of twelve stones, 15 to $18\frac{1}{2}$ feet high; but now only three remain, the largest prostrate, the other two still erect. Remains of a dolmen exist within this circle, near which, at the S end of the Bridge of Brogar, is a monolith 18 feet high, the finest of all the group. In another direction is a lesser monolith, only 8 feet high, 3 feet broad, and 9 inches in thickness. It is pierced with a circular hole, and by Mr Fergusson, in his *Rude Stone Monuments* (1872), is identified with the 'Stone of Odin,' familiar to readers of Scott's *Pirate*. The Ring of Brogar, 340 feet in diameter, is likewise encompassed by an outer ditch, 107½ feet in diameter, 31 to 33 wide, and 6 deep. It originally consisted of sixty stones, 6 to 15 feet high; but only fifteen, 3 to $14\frac{1}{2}$ feet high, are now standing, with remains of twenty-two others. The material of all is Old Red Sandstone. The famous tumulus of MAESHOWE has been noticed separately. Near it is the House of Stenness or Turmiston, a grey old-fashioned building of no very imposing appearance. From it Scott makes the 'Pirate' see the burning of his ship in Stromness Bay. In 1879 Stenness, with a small portion of the civil parish of Sandwick, was formed into a *quoad sacra* parish in the presbytery of Cairnston and the synod of Orkney. The minister's stipend is £111. The church was built in 1798. There are a Free Church preaching station and a public school. Pop. of *g. s.* parish (1881) 697, (1891) 647, of whom 53 were in Sandwick.

Stenscholl. See STEINSCROLL.

Stenton, a village and a parish of Haddingtonshire. The village stands near the right bank of Souchet Water, $5\frac{1}{2}$ miles SW of Dunbar, and 4 SE by S of East Linton or Prestonkirk, under which it has a post and telegraph office.

The parish, containing also Pitcox village, $1\frac{1}{2}$ mile ENE, is bounded N by Dunbar, E and SE by Spott and Innerwick, S by Berwickshire, SW and W by Whittinghame, and NW by Prestonkirk. Its utmost length, from N by W to S by E, is 10 miles; its breadth varies between $3\frac{1}{2}$ furlongs and 3 miles; and its area is 7585

acres. Prior to 1891 the parish had two detached sections. The larger of these, containing Millknowe farm, was joined to the main body of the parish by the Boundary Commissioners by incorporating the intervening portion of the parish of Spott and the detached part of Whittinghame, containing respectively 90 and 129 acres. The smaller or Friardykes section, 3 furlongs E of the Millknowe section, had an area of $340\frac{1}{2}$ acres, and was transferred to the parish of Spott. WHITTINGHAME or Beil Water flows $2\frac{1}{2}$ miles east-north-eastward along the Whittinghame boundary and across the northern interior, and, at the point where it first touches the parish, is joined by Souchet Water, running $2\frac{1}{2}$ miles north-by-eastward along the western border, Pressmennan Lake, lying in a deep ravine, $\frac{3}{4}$ mile SSE of the village, extends about 2 miles north-eastward, but its width varies greatly, the average being about 400 yards. It was formed about 1819 by the construction of a strong breastwork between the hill-screens of the ravine near a point where they stoop gradually to the plain. The hill-screens here are undulating and richly wooded, and, coming down in steep high banks upon the margin of the lake, sweep along in sinuous parallels, so as to render its configuration serpentine; whilst they are cut by walks and gemmed with attractions which render them, jointly with the lake, one of the most delightful pieces of close landscape in Scotland. Its waters, which are strictly preserved, abound in trout, originally brought from Loch Leven. Admission to the lake and grounds, however, is free to all. The lake sends off Bennets or Spott Burn north-eastward towards the German Ocean. In the extreme N the surface declines to 97 feet above sea-level, in the extreme S to 700; and between these two points it rises to 900 feet at Deuchrie Dod, 1000 at Friardykes Dod, and 1250 at Bothwell or Spartleton Hill—summits these of the LAMMERMUIR HILLS. The rocks are variously Devonian, Silurian, and eruptive; and the soil of the arable lands is partly of a light quality suited to the turnip husbandry, but mainly of an argillaceous kind, varying from stiff to loamy. Little more than 2000 acres are in tillage; about 400 are under wood; as much or rather more is in permanent pasture; and the rest is either hill-pasture or waste. Beil House, noticed separately, is owned by Mrs Nisbet Hamilton Ogilvy. (See DIBLETON.) Stenton is in the presbytery of Dunbar and the synod of Lothian and Tweeddale; the living is worth £371. The parish church, with a fine tower, is a handsome Gothic edifice of 1829, erected at a cost of over £2000, and opened by Dr Chalmers. In 1892 extensive improvements were made on it, and a stained-glass window was presented by Mr James Frazer. Close to it is an interesting fragment of the old church, with a saddle-backed tower and a Norman doorway. The parish was long called Pitcox, from the village of that name, where stood the original church; and it seems to have acquired the designation of Staneton, or Stonetown, from the stoniness of the ground around the church. In ancient times it was first a chapelry and next a prebend of Dunbar and a rectory. The public school, with accommodation for 150 children, had (1893) an average attendance of 98, and a grant of £105, 12s. Valuation (1885) £6245, 15s., (1893) £5662, 19s. 6d. Pop. (1801) 620, (1831) 686, (1861) 692, (1871) 612, (1881) 594, (1891) 556.—*Ord. Sur.*, sh. 33, 1863.

Stenton, a mansion in Caputh parish, Perthshire, delightfully situated on the left bank of the winding Tay, opposite Murly Castle, at the southern base of the wooded Craig of Stenton, and $3\frac{1}{2}$ miles SE of Dunkeld. Its oldest part bears date 1745; but the larger portion, in the Italian style, was built in 1860 by the late proprietor, Thomas Graham Murray, Esq., and is now owned by his son, Andrew Graham Murray, Esq. (b. 1849; suc. 1891), solicitor-general in 1891-92 and M.P. for Bute-shire.—*Ord. Sur.*, sh. 43, 1865.

Stepps, a station near the mutual boundary of Cadder and Shettleston parishes, Lanarkshire, on the Caledonian railway, $4\frac{1}{2}$ miles E by N of Glasgow. A number of excellent villas and cottages, with large gardens

STERLING HILL

attached, line the road here leading from Glasgow to Cumbernauld.

Sterling Hill. See PETERHEAD.

Stewartfield. See STEWARTFIELD.

Stevenson, a mansion in Haddington parish, Haddingtonshire, near the right bank of the Tyne, $2\frac{1}{2}$ miles ENE of Haddington town. John Sinclair, an Edinburgh merchant, who purchased the barony of Stevenson, was created a baronet in 1636; and his eighth descendant, Sir Robert Charles Sinclair, ninth Bart. (b. 1820; suc. 1863), is present proprietor.—*Ord. Sur.*, sh. 33, 1863. See MURKLE.

Stevenson, a town and a parish in Cunninghame district, Ayrshire. The town, lying 1 mile inland, is $2\frac{1}{2}$ miles E of Ardrossan, $\frac{1}{4}$ mile ENE of Saltcoats, and $\frac{1}{2}$ NNW of Stevenson station on the earliest section (1832) of the present Glasgow and South-Western system, that station being $2\frac{1}{2}$ miles SW of Kilwinning Junction and 29 SW of Glasgow. There is another station on the Lanarkshire and Ayrshire railway (opened in 1888). The town commands a fine view of the Bay of Ayr and the neighbouring parts of the Firth of Clyde, magnificently screened in the distance by Brown Carrick Hill and the Arran mountains. It is a place of so high antiquity as to be mentioned in a charter of the year 1240. Its inhabitants at a former period, and those of an extinct neighbouring village called Pipers Heugh, were famed for the making of Jews' harps. Stevenson has a post office, with money order, savings bank, and telegraph departments, a gaswork, 3 hotels, the county police station, a cemetery, a golf club, and a reading-room and library. The parish church is a handsome edifice of 1833, restored in 1882, with a steeple 120 feet high, and 1500 sittings; and a mission hall, with accommodation for nearly 300 persons, was erected in 1883 at a cost of £400. There are also Free and U.P. churches. The latter, in Shore Road, was erected in 1894 at an estimated cost of £2100, and has 450 sittings. The public school, in the centre of the town, is a recent and commodious building. Pop., inclusive of ARDEER Ironworks (1861) 3475, (1871) 3140, (1881) 3556, (1891) 4263, of whom 2184 were males.

The parish, containing also part of the town of SALT-COATS, is bounded N by Kilwinning, E by Kilwinning and Irvine, SE by Dundonald, SW by the Bay of Ayr, and W and NW by Ardrossan. Its utmost length, from NW to SE, is $4\frac{1}{2}$ miles; its utmost breadth is $2\frac{3}{4}$ miles; and its area is $6\frac{1}{2}$ square miles or 4268 $\frac{1}{2}$ acres, of which 424 $\frac{1}{2}$ are foreshore and 72 $\frac{3}{4}$ water. The GARNOCK curves nearly 3 miles south-by-eastward along the Kilwinning and Irvine boundary, till it falls into the river IRVINE, which, itself dividing Stevenson from Dundonald, flows $\frac{1}{2}$ mile west-south-westward to its mouth at Irvine Bar. Triangular Ashgrove or Stevenson Loch ($3\frac{1}{2} \times 2\frac{1}{2}$ furl.) lies at the meeting-point with Ardrossan and Kilwinning parishes, and sends off a rivulet $2\frac{1}{2}$ miles southward, through the town of Stevenson, to the sea. The coast-line, extending $4\frac{1}{2}$ miles north-westward from the mouth of the Irvine to Saltcoats harbour, is low; and all the tract between the beach and the Garnock is occupied by the desolate ARDEER Sandhills, 50 to 90 feet high. Here, $1\frac{1}{2}$ mile SSE of the town of Stevenson, is the extensive factory of Nobel's Explosives Company, founded in 1873. It covers an area of nearly 1 square mile, and employs several hundred men and women. On 8 May 1884 it was the scene of a dreadful explosion, by which ten women were killed and four injured. Under ARDEER have been noticed the ironworks (1852) of Messrs Merry & Cunninghame, the coal mines, and the valuable sandstone quarry. Besides these there are three large iron foundries. The rest of the parish is rather hilly, attaining 104 feet near Seabank, 215 on the western border near Middlepart, and 288 at the north-western corner. This more elevated district, whose soil consists chiefly of stiffish clay or loam, is well enclosed and cultivated, and in some places finely wooded. The parish derives its name from Stephen Loccard or Lockhart, whose father about 1170 obtained a grant of it from Richard

STEWARTON

de Morville, Lord of Cunninghame and Constable of Scotland. The second steam engine ever employed in Scotland was set up in 1719 for pumping water between Saltcoats and the town of Stevenson. Ruined KERELAW Castle is noticed separately, as also are the mansions of HAYOCKS, HULLERHURST, and KERELAW. Stevenson is in the presbytery of Irvine and the synod of Glasgow and Ayr; the living is worth £341. Prior to the Reformation the parish was a vicarage under the monks of Kilwinning. Two public schools—Kyles Hill and Stevenson—with respective accommodation for 289 and 750 pupils, had (1893) an average attendance of 280 and 672, and grants of £292, 7s. and £588. Valuation (1885) £21,546, 7s. 8d., (1894) £23,576, 17s. Pop. (1801) 2146, (1831) 3544, (1851) 3811, (1861) 5452, (1871) 5019, (1881) 5694, (1891) 6209.—*Ord. Sur.*, sh. 22, 1865.

Stewartfield, a village in Old Deer parish, Aberdeen-shire, $2\frac{1}{2}$ miles SW of Mintlaw, and $11\frac{1}{2}$ WSW of Peterhead. Founded in the latter part of the 18th century, and for some time called Crichtie, it now has a post office under Mintlaw, a Free church (1843), a U.P. church (1822), a Congregational chapel (1801), and a girls' public school. Pop. (1841) 614, (1861) 751, (1871) 647, (1881) 675, (1891) 597, of whom 318 were females.—*Ord. Sur.*, sh. 87, 1876.

Stewarton, a town and a parish of Cunninghame district, Ayrshire. The town, standing 800 feet above sea-level, on the right bank of Annick Water, has a station upon the Glasgow, Barrhead, and Kilmarnock Joint railway, $5\frac{1}{2}$ miles N by W of Kilmarnock, and $18\frac{1}{2}$ SW by S of Glasgow. Annick Water, while passing alongside the town, makes a beautiful semicircular sweep of such scope as to measure nearly $\frac{3}{4}$ mile along the chord; and it is spanned by three bridges, respectively at the ends and in the middle of the sweep. One street, extending along the chord of the semicircle, and prolonged upon the margin of the stream, runs fully 1 mile from NE to SW, and carries along the Glasgow and Irvine highroad. Another street opens from the bridge at the middle of the semicircular sweep, cuts the former street at right angles, and carries along the Kilmarnock and Paisley road. Some minor thoroughfares belong to the body of the town, and considerable clusters of buildings form suburbs. Stewarton may vie with any town of its size in the West of Scotland for regularity, beauty, and general attractions. But though a place of considerable antiquity it was for centuries a mere obscure village; and not till the close of the 18th century did it decidedly assume the healthful, growing, and well-to-do appearance by which it has since been distinguished. Most of the houses of its operatives have gardens attached to them; and many of the houses of its middle or better classes are substantial or even handsome structures. The prosperity of Stewarton has arisen wholly from manufactures, chiefly in the department of woollen fabrics. The making of woollen bonnets has long been carried on, military forage caps forming in particular a staple manufacture. About a score of firms are engaged in this trade. There are also a number of worsted mills and hosiery manufactories, the latter industry continuing to grow rapidly. Dyeing and spindle-making are also carried on. An item in the industries of the place is the making of portable bee-boxes, so constructed as to prevent 'swarming,' and the invention of a townsman. The Cunninghame Institute, liberally supported by the lord of the manor, besides providing an extensive library and reading-room, contains a large and a smaller hall, committee rooms, a recreation room, etc. The town has also a post office, with money order, savings bank, and telegraph departments, branches of the Royal, Clydesdale, and Union Banks, a savings bank, gaswork (1832), a hotel, a female benevolent society, an agricultural and horticultural association, a cattle show and farmers' society, and a branch of the Ayrshire mission to the deaf and dumb. Fairs are held on the Monday before the first Tuesday of May, the Wednesday before the last Thursday of October, and the Wednesdays of April and May before Glasgow 'Skeir' Friday and Rutherglen

'Beltan Fair.' The parish church, built in 1696, and greatly enlarged in 1825, contains 1300 sittings. The Free church was built in 1828 by a Secession congregation who had afterwards joined the Church of Scotland; and, standing conspicuously on a rising-ground nearly in the centre of the town, has a spire 80 feet high. The U.P. church was erected in 1854; and there are also E.U. and Methodist chapels. The public school is a recent and handsome edifice. Stewarton is a police burgh, and is governed by a provost, 2 bailies, and 6 commissioners. Pop. (1833) 2969, (1851) 3164, (1861) 3145, (1871) 3299, (1881) 3130, (1891) 2687, of whom 1230 were males and 1457 females. Houses (1891) occupied 573, vacant 93, building 1.

The parish is bounded N by Dunlop, NE by Neilston and Mearns in Renfrewshire, E by Fenwick, S by Dreg-horn, SW by Irvine and Kilwinning, and W by Kilwinning. Its utmost length, from NE to SW, is $8\frac{1}{2}$ miles; its breadth varies between $1\frac{1}{2}$ and $4\frac{1}{2}$ miles; and its area is $21\frac{1}{2}$ square miles or 13,667 $\frac{1}{2}$ acres, of which $41\frac{1}{2}$ are water. ANNICK Water flows through the parish from end to end, and receives the tribute of GLAZERT and other burns. In the extreme SW, where Annick Water passes off from Stewarton, the surface declines to 150 feet above sea-level; and thence it rises north-eastward to 363 feet near Lainshaw, 404 at High Cross, 428 at Little Cutstraw, 526 at Gallowberry, 772 at Glenouther Rig, and 802 at the Renfrewshire border. It is thus comparatively high at the NE end, but gradually descends south-westward in a beautiful diversity of gentle eminences, fine slopes, and pleasant flats. Not a few of its heights, even though of little altitude in themselves, command gorgeous panoramic views of much diversity and of great extent. Trap rocks predominate in the north-eastern district, and rocks of the Carboniferous formation in the SW. Sandstone, limestone, and coal are worked; but the last exists only in very thin strata, and is used principally for calcining the limestone. The soil, for the most part, is fertile, and derives great benefit from the grass-fallow. Natives were David Dale (1739-1806), the New LANARK manufacturer; and Robert Watt, M.D. (1774-1819), the compiler of the *Bibliotheca Britannica*. The principal antiquities are remains of two castles, once the seats of the Cunninghams of CORSEHILL and the Cunninghams of AUCHEN-HARVIE, both of them branches of the noble family of Kilmours. These are noticed separately, as also are the mansions of KENNOX, LAINSHAW, and ROBERTLAND. Stewarton is in the presbytery of Irvine and the synod of Glasgow and Ayr; the living is worth £356. The parish was anciently a vicarage under the monks of Kilwinning. On the lands of Lainshaw, at a place now called Chapel, and formerly called Chapelton, anciently stood a chapel dedicated to the Virgin. Two public schools, Kingsford and Stewarton, with respective accommodation for 91 and 799 children, had (1892) an average attendance of 30 and 396, and grants of £44 and £346, 10s. Valuation (1885) £27,508, (1894) £25,926, 18s. Pop. (1801) 2657, (1841) 4656, (1861) 4449, (1871) 4478, (1881) 4309, (1891) 3304.—*Ord. Sur.*, sh. 22, 1865.

Stewarton. See KIRKCOLM.

Stewarton, Inverness-shire. See CAMPELTOWN.

Stinchard, The, a salmon and trout river of Carrick, Ayrshire. It rises on the eastern border of Barr parish, and runs $29\frac{1}{2}$ miles north-westward and west-south-westward, through or along the borders of Barr, Colmonell, and Ballantrae parishes, till it falls into the Irish Sea, in the vicinity of the village of Ballantrae. Its principal affluents are the Dhuisk and the Tig. Its current, for the most part, is clear, broad, and shallow, but is subject to sudden and violent freshets.—*Ord. Sur.*, shs. 8, 7, 1863.

Stirkoke House, a mansion in Wick parish, Caithness, $3\frac{1}{2}$ miles W of the town. Its owner is Edward William Horne, Esq. (b. 1857; suc. 1874).—*Ord. Sur.*, sh. 116, 1878.

Stirling, a small parish, containing the royal burgh of the same name, in the NE of Stirlingshire. Prior to

1891 the parish was partly also in the county of Clackmannan, but the Boundary Commissioners in that year placed it wholly in Stirlingshire. For particulars regarding the interchange of territory between this parish and that of ST NINIANS, see the latter article. Stirling parish is bounded N by the parish of Logie, and elsewhere by the parish of St Ninians. Commencing at a point in the centre of the old bridge near Bridgehaugh, the boundary line goes up the Forth (following the burgh parliamentary boundary) until opposite Kildean. Here it leaves the river, proceeding W and S past Raploch, then SW and SE till it reaches the centre of the Stirling and St Ninians road. This it follows in a N direction to its junction with Craigs Street, SE along the centre of which it goes till near Aitken's Mill, when it takes a southerly and south-easterly course, till it again meets the burgh parliamentary boundary, which it follows N to the Forth, and then goes down the river to a point S of West Grange. Thence it strikes first NW and then SW till the starting point is reached. In 1895 steps were taken to have the parish boundaries made coextensive with the parliamentary and municipal areas. The ground outside the town is mostly low and level, the highest point being in the King's Park, where a height of over 200 feet is reached. The castle ridge in the town is 420 feet. The soil on the low flats is a rich carse clay, and elsewhere it is a sharp friable earth. The underlying rocks are carboniferous, with masses of intrusive basalt. The parish is traversed by different sections of the Caledonian and North British railway systems, as well as by the main roads that radiate from the town.

Stirling was anciently in the diocese of St Andrews, but being comprehended within the archdeaconry of Lothian, it followed the fortunes of that district when it was in 1683 erected by Charles I. into the diocese of Edinburgh, the minister becoming one of the prebendaries of the cathedral church of St Giles. It is the seat of a presbytery in the synod of Perth and Stirling, and has four charges, with livings worth respectively £456, £250, £450, and £165 a year. The churches are noticed in the following article. The parishes of Stirling, St Ninians, and Kilsyth form a poor-law combination, with a poorhouse at the N end of Stirling. There is accommodation for 176 inmates, and the average number in it is about 120. The village of RAPLOCH is separately noticed. Valuation, exclusive of the burgh (1884-85), £2435, 12s. 2d., (1892-93) £718, 9s. 3d. Pop. (1801) 5271, (1831) 8556, (1861) 11,714, (1871) 12,014, (1881) 13,480, (1891) 14,170, of whom 7575 were females. Houses (1891) inhabited 2945, uninhabited 193, and being built 10.

The presbytery of Stirling comprehends the *quoad civilia* parishes of Airth, Alloa, Alva, Bothkennar, Clackmannan, Denny, Dollar, Gargunnoch, Larbert, St Ninians, and Stirling; the *quoad sacra* parishes of Bannockburn, Bonnybridge, Haggs, Marykirk, Plean, and Sauchie, and mission stations at Alloa, Buckieburn, Carronshore, and Johnstone; the total number of charges being 21. The Free Church has a presbytery of Stirling, with charges at Alloa (2), Alva, Bannockburn, Cambusbarron, Clackmannan, Denny, Dollar, Dunipace, Larbert, St Ninians, Stirling (4), and Tullibody, and a preaching station at Airth—in all 16. The United Presbyterian Church has also a presbytery of Stirling, with charges at Alloa, Alva, Bannockburn, Blairlogie, Bridge of Allan, Bridge of Teith, Buckleyvie, Callander, Clackmannan, Coalsnaughton, Dollar, Dunblane, Greenloaning, St Ninians, Stirling (3), and Tillicoultry, and a preaching station at Fishcross—in all 18.

Stirling (old forms *Strivelim*, *Striveling*, *Strivelym*, *Strevelin*, *Stirling*), a market town, a royal and parliamentary burgh, and the county town of Stirlingshire, occupying part of the parish just described, but having out-lying suburbs extending into the parishes of St Ninians and Logie. Standing on the river Forth $16\frac{1}{2}$ miles from its mouth opposite Kincardine, the town is connected with Leith by steamer, but in consequence of this having to accommodate itself to the tide, and owing also to the winding course of the river, there is but little river trade,

Stirling is, however, a railway centre, the joint line used by both the Caledonian and North British companies between Larbert Junction and Perth passing through it, and lines belonging to the latter company also branching off to the eastward through Fife, and westward along the valley of the Forth. It is by rail 7 miles W of Alloa, 10 NW of Falkirk, 13 W by S of Dollar, 24 W by S of Kinross, 29 NE of Glasgow, 80 ENE of Balloch on Loch Lomond, 33 SW of Perth, 36 WNW of Edinburgh, and 84 ESE of Oban. The town owes its origin to the well-known castle of Stirling, which holds such a prominent position in Scottish history. The castle occupies the summit of an isolated hill of intrusive basalt, which, springing abruptly from the valley of the Forth, presents a precipitous front to the NW, and slopes from this eastward. It has been often compared to the Acropolis at Athens, and bears a considerable resemblance to the long ridge of the old town of Edinburgh, extending from the Castle to Holyrood, but the ridge at Stirling is much shorter. The more modern districts of the town and the suburbs extend over the flatter ground around the base. The higher parts of the rock—particularly along the Back Walk, and still more in the Castle gardens NW of the Douglas Room and SW of the Palace—command very fine views. 'Who,' says Dr Macculloch, 'does not know Stirling's noble rock, rising, the monarch of the landscape, its majestic and picturesque towers, its splendid plain, its amphitheatre of mountain, and the windings of its marvellous river; and who that has once seen the sun descending here in all the blaze of its beauty beyond the purple hills of the west can ever forget the plain of Stirling, the endless charm of this wonderful scene, the wealth, the splendour, the variety, the majesty of all which here lies between earth and heaven.' The foreground is everywhere a rich alluvial plain, fertile, highly cultivated, and well wooded, with here and there an abrupt protruded hillock, starting abruptly from the flat, and relieving it from tameness. To the N and NE are the woods about Bridge of Allan and Dunblane, and the hill-screened vale of Allan Water, then the picturesque wood-crowned cliffs of Abbey Craig, and the soft pastoral slopes of the Ochils. To the E and SE are the fertile carse of Stirling and Falkirk, with the Forth winding her silvery course to the sea, and beyond, the distant hills of Fife and the Lothians; while to the SW is the termination of the Lennox Hills. 'To the W and NW are the flat valleys of the upper Forth and Teith with winding rivers and wooded policies, and shut in by the Campsie Fells, the Monteith Hills, the Braes of Doune, and behind and beyond, sweeping round from W to N, are a great semicircle of distant peaks, the most conspicuous of which are Ben Lomond (3192 feet), Ben Venue (2393), Ben A'an (1851), Ben Ledi (2875), Ben Voirlich (3224), and Uamh Mhor (Uam Var; 2179). 'Eastward from the castle ramparts,' says Alexander Smith, 'stretches a great plain bounded on either side by mountains, and before you the vast fertility dies into distance flat as the ocean when winds are asleep. It is through this plain that the Forth has drawn her glittering coils—a silvery entanglement of loops and links—a watery labyrinth—which Macneil has sung in no ignoble numbers, and which every summer the whole world flocks to see. Turn round, look in the opposite direction, and the aspect of the country has entirely changed. It undulates like a rolling sea. Heights swell up into the blackness of pines, and then sink away into valleys of fertile green. At your feet the Bridge of Allan sleeps in azure smoke—the most fashionable of all the Scottish *spas*, wherein, by hundreds of invalids, the last new novel is being diligently perused. Beyond are the classic woods of Keir; and ten miles further, what see you? A multitude of blue mountains climbing the heavens! The heart leaps up to greet them—the ramparts of the land of romance, from the mouths of whose glens broke of old the foray of the freebooter; and with a chief in front with banner and pibroch in the wind, the terror

of the Highland war. Stirling, like a huge brooch, clasps Highlands and Lowlands together.'

History.—When the first fort or village was formed at Stirling must remain doubtful, for though the isolated position of the rock, and its nearness to what must always have been the principal ford along the lower part of the Forth, point it out as the natural key of the Highlands and an important strength, it is extremely difficult to say whether it was so occupied prior to and during the Roman times or not. Situated near the skirts of the great Caledonian Forest, and in the midst of a flat that must at that time have been, to a considerable extent, a marsh, we might expect to find it one of the strongholds of the Damnonii who inhabited the district, but Ptolemy places their chief town Alauna—not to be confounded with Alauna of the Gadeni—to the NW on the point at the junction of the Allan and the Forth. The Roman road from Camelon northward passed to the W of the Castle rock, and seems to have crossed the river close to this at a ford called the Drip; but whether the Romans had a camp on the high ground cannot be ascertained, though during the period when they held the district N of Antoninus' Wall they certainly seem to have had an outpost here. Sir Robert Sibbald, writing at the end of the 17th or the beginning of the 18th century, says that there was at that time on a stone on the brow of the hill overlooking Ballengeich Road, opposite the old gate of the Castle, an inscription '*In excels. agit. leg. II.*', which has been extended into *In excubias agitantibus legionis secunde*, the suggested rendering being 'for the daily and nightly watch of the second legion.' This inscription is still traceable on what is pointed out as 'the Roman Stone.' What the history of the place may have been in the long interval extending from the 5th to the 10th century it is hardly possible to conjecture. Probably the experiences of the place then may have been the same as those of any border fortress lying between two peoples who were often at war; and it is to this period that the modern name—the first part of which is said to be a word meaning strife, is supposed to be due; and hence also a name used by some of the chroniclers *Mons Dolorum*. Another name, used subsequently and referred to by Sir David Lindsay in his *Complaint of the Papingo* (1539), was *Snawdon* or *Snowdoun*, which Chalmers has derived from the British *Snwadum*, 'the fortified hill on the river.' According to Boece, followed by Buchanan, the Northumbrian princes, Osbrecht and Ella, in the 9th century subdued the whole country as far as Stirling, where they built a strong fort and also a bridge across the river, but the story is undoubtedly fabulous, for these princes were in reality rival claimants of the throne of Northumbria, and were, in 867, both slain in a battle against the Danes at York, the danger of the realm from the sea-rovers having compelled them to unite their forces. There certainly was war between Alban and Northumbria a century later, about 971 or 975, when, however, the attack was made from the Scottish side by Kenneth III., whom we find also, as a means of protection, fortifying the fords of the Forth, which was the boundary of his kingdom to the S, but no specific mention is made of Stirling.

By the 12th century, when the place finally emerges from its historic obscurity, it must have made considerable progress. Alexander I. died in the castle in 1124; David I., in a grant to the church of the Holy Trinity at Dunfermline between 1124 and 1127, speaks of his burgh of Stirling; in 1175 the castle must have been one of the five most important strengths in Scotland, for it was one of those selected to be held by English garrisons till the conditions under which Henry II. had released William the Lion should be fulfilled; and William himself, after holding his last parliament here in 1214, and getting his son accepted as their future king by the bishops, earls, and barons, died in the Castle 'full of goodly days and at a good old age,' fully armed with thorough devoutness, a clear shrift, true charity, the viaticum of Christ's body, and the resu-

of the sacraments.' From this time onward the Castle became a favourite royal residence, and here Alexander II. is said to have been when he promulgated his law establishing trial by jury; and here John Balliol held the convention which, in 1295, agreed to the formation of an offensive and defensive league with France against England, and for the marriage of his son Edward with the daughter of the French King. On the approach of Edward I. with his army in 1296 the Castle was either abandoned or at once surrendered, only to be recaptured the following year, after the battle of Stirling Bridge. This was fought at the site of the earliest bridge that existed in the neighbourhood of Stirling, at Kildean, about five furlongs NW of Stirling Castle. Sibbald says that a bridge was built here by Agricola, but there does not seem to be any authority for the statement. That there was one at a very early date is, however, clear, for it is probable that this Kildean bridge is the one mentioned in the old laws printed at the beginning of the Record edition of the Scots Acts. It seems to have been formed by beams resting on stone pillars, remains of which were to be seen till about the end of the 18th century. In 1297, after the departure of Edward I. for Flanders, Wallace, having raised a large army in the districts N of the Tay, and got possession of all the strongholds there, was besieging Dundee when news arrived that the Earl of Surrey was pressing forward at the head of a large English army in order to attack him. He immediately advanced to the Forth, judging that to be the best position for receiving their attack; and took up his position along the loop of the Forth in front of the Abbey Craig, where the massive tower reared to his memory now stands. Terms offered by the English leaders having been rejected, they advanced to the attack. A proposal that a portion of the army should cross by the neighbouring ford was not acted on, and the whole line began to advance by the bridge, which was so narrow that only two persons could pass abreast. When about half of the English force had crossed, a body of spearmen, sent by Wallace for the purpose, dashing suddenly forward, gained and took possession of the end of the bridge, and Surrey and the rest of his forces had to stand helplessly by and see their comrades who had crossed attacked and routed by the Scottish army. Only a few were able again to cross the river in safety, and the body that had not crossed retired in great disorder. Blind Harry accounts for the severance of the two portions of the English army somewhat differently. After recording Wallace's intention—

'Bot ner the bryg my purpos is to be
And wyrk for thaim sum suttell jepert;

he goes on to tell how

'On Saterdag on to the bryg thai raid,
Off gud playne burd was well and junctly maid:
Gert wachis wait that nane suld fra thaim pass.
A wricht he tuk, the outtellet at thar was,
And ordand him to saw the burd in twa.
Be the myd streit, that nane mycht our it ga;
On charnail bandis nald it full fast and sone,
Syne tyld with clay as na thing had beyne done.
The tothir end he ordand for to be,
How it suld stand on thar rowaris off tre,
Quhen ane war out, that the laiff down suld fall;
Him self wndyr he ordand thar with all,
Bownd on the trest in a credill to sit,
To lousse the pyn quhen Wallace leit him wit.
Bot with a horn, quhen it was tyme to be,
In all the ost suld no man blaw bot he.'

And so when Wallace blew his horn, part of the bridge fell. The cognomen of 'Pin' Wright was given to the man who undertook to 'lousse the pyn,' and a descendant who died recently in Stirling still bore the name, the family having for their coat of arms a carpenter's axe, the crest being a mailed arm grasping an axe, and the motto *Tam arte quam morte*.

Between this and 1303 the Castle seems to have changed hands several times, but when Edward I. commenced his great invasion in the year just mentioned, it was held by a Scottish garrison. So strong did

Edward deem the position that he passed it by when he went north, and did not turn his attention to it till 'all magnates but William Wallace had made their submission unto him, and all castles and towns—except Strivelyn Castle and the warden thereof—were surrendered unto him.' After keeping lent at St Andrews, and holding a parliament at which Sir William Wallace, Sir Simon Frazer, and the garrison of Stirling Castle, were outlawed, he began at Easter 1304 the siege which is memorable for the determination with which the small garrison of less than 200 men held, for more than three months, against the whole English army, this the last spot of ground that was not in the hands of the foreign foe. The Castle seems to have been partly rebuilt, not long before, on the Norman model, and here not only did the strength of the masonry offer stout resistance to the battering machines of the besiegers, but there was the additional difficulty of the steep rock on which the Castle stood. Some of the machines threw very heavy stones, and one is mentioned as being able to hurl against the walls blocks weighing from two to three hundredweights. King Edward himself, though sixty-five years old, was in the midst of the work. 'He was,' says Dr Burton, 'repeatedly hit, and the chronicles record with reverence the miraculous interventions for his preservation. On one occasion Satan had instigated one of the Scots to draw an arblast and aim an arrow against the Lord's anointed, who was riding exposed in the front. A devil's angel sped the shaft in so far that it pierced a chink of the mail, but then one of heaven's angels came to the rescue and stopped it from penetrating the sacred body of the conquering king—for it is curious to observe, that it is all along not from the justice or holiness of his cause, but from his success as a conqueror that these chroniclers treat his cause as a holy one, and denounce the resistance it met with as unholy rebellion. Stronger evidence still of his fixed determination to leave no means untried for the reduction of the Castle is his bringing the lead from the roofs of churches and religious houses in St Andrews and Brechin to be made into weights in working the siege engines.' He was a superstitious man, and knew that this was sacrilege, but he gave orders that no altar was to be uncovered, and by-and-by, when he had attained his object, payment was made to the Bishop of Brechin and the Prior of St Andrews 'pro plumbis quod extrahi fecimus tam de ecclesiis quam de aliis domibus ipsorum Episcopi et Prioris apud Breghyn et Sanctum Andream.' When Sir William Oliphant and his garrison were at last driven by famine to surrender, they numbered only 140. From this time the Castle remained in the hands of the English till 1314, when it was surrendered the day after the battle of BANNOCKBURN. In 1333 it was taken by Balliol's party, and though it was besieged in 1336 and again in 1337 by Sir Andrew Moray, it was on both occasions relieved by the English, and did not fall into the hands of David Bruce's friends till 1339. In 1380 Sir Robert Erskine was appointed governor of the Castle by King David, and besides ample allowances for the maintenance of the garrison, obtained a grant of all the feus and revenues in Stirlingshire belonging to the Crown, with the wardships, escheats, and other emoluments annexed to them. This office was hereditary in the Erskine family till the forfeiture of the Earl of Mar in 1715. During the times of Robert II. and Robert III., though the Castle was occasionally the royal residence, there is but little mention of it otherwise.

The warlike operations of the 13th and the beginning of the 14th centuries were by no means in favour of the burgh, for after it had been accidentally destroyed by fire in 1244, it was again burnt in 1298 by Wallace on his retreat from Falkirk, so that it might not afford shelter to the English. It was also burned in 1385 by Richard II., and though its losses were partly compensated by the grants to the burgesses by Robert II. of fishings and petty customs, it was not till the time of James I. that it may be said to have fairly started in its course of progress. The Castle was the birthplace of James II., and after the murder of his

father it afforded a place of refuge for him and his mother against the ambitious designs of Sir William Crichton. Subsequently, in 1452, one of the rooms in the Castle was the scene of the murder of the Earl of Douglas, who, having come to Stirling at the King's command and with a royal safe-conduct, and having been 'well received and entertained by the king, who thereafter called him to the supper, and banquetted him very royally,' yet haughtily refused to break the agreements that he had entered into with the Earls of Crawford and Ross. He even retaliated and 'reproached the king very arrogantly,' so that at last the royal patience gave way, and James 'took a high anger and thought to do the thing that was less skait to the commonwealth than to trouble the whole realm therewith; and so he pulled forth a sword, and said, "I see well, my lord, my prayer cannot prevail to cause you desist from your wicked counsel and enterprizes, I shall cause all your wicked conspiracies to cease." Thereafter immediately he struck him through the body with the sword; and thereafter the guard, hearing the tumult within the chamber, rushed in and slew the earl out of hand.' The Earl's brother and many of his friends were in the town, and as they were unable to revenge themselves on the king, they wreaked their wrath on the burgesses, which was hardly fair. The Earl's brother 'made a long harangue and exhortation to his friends to siege the Castle and to revenge the unworthy slaughter of his brother with the king's life. But when they saw it was impossible to do, seeing they had no munition fitting for this effect, the Castle being so strong, they gave the king very contumelious words, saying, "that they should never obey nor know him again as a king or prince, but should be revenged upon him and his cruel tyranny or ever they ceased." After this they burned and harried the town of Stirling.' James III., who was born in the Castle, found its retirement congenial to his artistic tastes, and made it his chief residence, while it was also a favourite residence of James IV., who is said to have done penance in the neighbouring church of the Franciscans for the share he had taken in the insurrection that ended with his father's death. To James V. the Castle afforded a place of refuge when he escaped from the power of the Douglases in 1528, and the pass to the NE of it furnished him with the name he so often adopted in his wild *incognito* rambles and adventures among his people—the Gudeman of Ballengeich. His infant daughter Mary and her mother were brought here in 1543,—Stirling being deemed a safer place than Edinburgh or Linlithgow, on account of its nearness to the Highlands,—and here the infant queen was crowned when scarcely nine months old, the Regent Arran carrying the crown and Lennox the sceptre; and the Estates fixed the Castle as the royal residence for the time being. In the early times of the Reformation it became, in consequence, one of the centres of the influence of Mary of Guise, who was here when the news came of the first outbreak of popular fury at Perth against the Roman Catholic Church in 1559. Later she intended to garrison the place with French soldiers, but was prevented by the Earl of Argyll, Lord James Stewart, and the other Lords of the Congregation, who 'reformed Stirling' in the usual manner, and also entered there into their third bond of mutual adherence and defence. Stirling is closely associated with many of the important events of Mary's reign after her return from France. In 1561 'her grace's devout chaplains would, by the good device of Arthur Erskine, have sung a high mass,' but 'the Earl of Argyll and the Lord James so disturbed the quire, that some, both priests and clerks, left their places with broken heads and bloody ears.' It was here that the special council was held at which she announced her intended marriage with Lord Darnley, and here her infant son, afterwards James VI., was baptized with great pomp in December 1566, the Privy Council levying a sum of £12,000 to defray the expense, the large amount being necessary from the fact that 'sum of the grttest

princes in Christendome hes earnestlie requirit of our soveranis that be thair ambassatouris that may be witnessis and gosseppis at the baptisme of thair Majesties derist sone.' Queen Elizabeth, who was god-mother, sent a gold font weighing 333 ounces, which her ambassador was told to 'say pleasantly was made as soon as we heard of the prince's birth, and then 'twas big enough for him; but now he, being grown, is too big for it; therefore it may be better used for the next child, provided it be christened before it outgrows the font.' The Countess of Argyll represented the English Queen, and as the ceremony was a Roman Catholic one, and the countess was a member of the Reformed Church, she came under the displeasure of the General Assembly of 1567, which ordered her to make public repentance in the Chapel Royal of Stirling—the place of her offence—'upon a Sunday in time of preaching, for assisting at the prince's baptism, performed in a papistical manner.' In the following year, Mary having abdicated, James was crowned here, and the Castle remained his residence for the first thirteen years of his life, and was the meeting-place of the parliaments convened by the various regents as well as the scene of several other incidents connected with the struggles for power going on at the time. In May 1569 four priests of Dunblane, who had been sentenced to be hanged at Stirling for saying mass contrary to act of parliament, had their punishment commuted, and were instead chained to the market-cross wearing their vestments, and after they had stood thus for an hour, while the mob pelted them with stones and offered them other indignities, they were loosed, but their vestments, books, and chalices were burned by the hangman. During part of the regency of Lennox the Court of Session sat here, as also did the General Assembly in 1571 and 1578. In the former year also, Stirling was the scene of the execution of John Hamilton, Archbishop of St Andrews, who was captured at Dumbarton Castle early in the year, and hanged at the common place of execution at the market-place of Stirling shortly afterwards on charges of being accessory to the murders of Darnley and the Regent Murray, and of conspiring against King James. In the same year too, while a parliament, summoned by Lennox—contemptuously styled by its opponents the Black Parliament—was sitting, a number of Queen Mary's supporters who had been threatened with forfeiture, sent a party of horsemen, led by Kirkcaldy of Grange, from Edinburgh by night, to attempt to surprise and seize a number of the nobles attending the parliament. Reaching the town before daybreak, they surrounded the houses where the leading men were lodged, and meeting with no resistance except from Morton, who would not surrender till his house had been set on fire, they started on their return to Edinburgh, carrying off Regent Lennox and ten other noblemen as prisoners. Some of the followers of Scott of Buccleuch having, however, stayed behind for the purpose of plundering, caused an alarm in the Castle; and the Earl of Mar, marching out with a body of soldiers, soon not only put the plunderers to flight, but, having aroused the townsmen, pursued the main body so hotly that all the prisoners were rescued, the Regent being, however, mortally injured in the struggle. In 1578 the first parliament convened by James VI., after he nominally took the government into his own hands, met in the hall of the Castle; but the place of meeting was so displeasing to the party opposed to Morton—who maintained 'that a meeting of the Estates held within a fortress commanded by an enemy of his country was no free parliament'—that its choice almost led to civil war. After a great reconciliation banquet given subsequently in the Castle, the Earl of Athole died suddenly, and it was asserted that he had been poisoned. In 1584 the Earls of Angus and Mar, the Master of Glamis, and others of the Ruthven party, seized the Castle; but being unable to hold it against the force raised by the Earl of Arran, they retired to the Highlands, and finally fled to England, only, however, to return in 1585, when, in the Raid of Stirling, they took possession of the place, where James

was himself residing at the time, and procured from the king a reversal of their own forfeitures and the restoration of the Gowrie family to their vast estates. In 1594 the town witnessed the greatest pageant that it ever saw, or probably ever will see, at the baptism of Prince Henry, the eldest son of James VI. 'The noble and most potent prince of Scotland was born in the castle of Strivling, the 19 day of February 1594, upon which occasion the King's majestie sent for the nobles of his land, and to all the capitall burrows thereof, . . . and proposed unto them that it was necessary to direct out ambassadours to France, England, Denmark, the Low Countries, the Duke of Brunswicke, his brother-in-law, and to the Duke of Magdelburg, the queenis majestie's grandfather, and to such other princes as should be thought expedient. Likewise he thought the castle of Strivling the most convenient place for the residence of this most noble and mightie prince, in respect that he was borne there; as also, it was necessary that sufficient preparation might be made for the ambassadours that should be invited to come, for honour of the crown and cuntry. And besides all this, because the Chapell Royal was ruinous and too little, concluded that the old chapell should be utterly rased, and a new erected in the same place, that should be more large, long, and glorious, to entertain the great number of straungers expected. These propositions at length considered, they all, with a free voluntarie deliberation, graunted unto his majestie the summe of an hundred thousand pounds money of Scotland.' And so the new chapel was built by the 'greatest number of skilled workmen,' James himself superintending; and the ceiling was adorned with gold, and the walls decorated with paintings and sculpture. During the two days before the baptism, which took place on 30 Aug., sports were held in 'The Valley.' After all the pompous ceremonial of the baptism, which was too long to be here minutely detailed, a banquet took place in the Parliament House, where 'the kinge, queene, and ambassadours were placed all at one table, being formed of three parts, after a geometrical figure, in such sort that every one might have a full sight of the other.' During the progress of the feast, a triumphal car, seemingly drawn by a Moorish slave, entered, full of fruits and delicacies, which were distributed among the guests by six damsels clothed in satin and glittering with gold and silver. Thereafter there entered a boat eighteen feet in length, placed on wheels and moved by invisible springs. The masts, which were forty feet high, were red, the ropes of red silk, and the blocks were of gold. The sails were of white taffety, and the anchors were tipped with silver. She was loaded with sweetmeats, and on board were Neptune, Thetis, Arion, and Triton, while three syrens floated in the artificial sea that surrounded the vessel.

In 1637 the meetings of the privy council and of the Court of Session were held at Stirling for several months in consequence of the disturbed state of Edinburgh arising out of the attempted introduction of the liturgy. In 1645 the plague raged in the town from the middle of July till October, and obliged the parliament which had been already driven by it from Edinburgh to adjourn to Perth. During this time the meetings of town council are said to have been held in the Cow Park. In the same year the opposing armies of Montrose and Baillie passed the Forth at Kildean ford on their way to Kilsyth, but they seem both to have avoided the town in consequence of the plague. The Castle was held for the Covenanters. In 1648 the Highland followers of the Marquis of Argyll on their way to join the forces being assembled by the anti-royalist minority of the Estates were attacked and defeated by a portion of the Duke of Hamilton's army under Sir George Munro. Stirling was the rallying point of the force defeated by Cromwell at Dunbar, and afforded at that time a place of refuge for the Committees of Church and State, and the magistrates of Edinburgh who endeavoured to concert a plan of future operations, while at the same time a parliament—afterwards adjourned to Perth, and the last in

Scotland at which the sovereign personally presided—was held; and it was thence that Charles II. started in 1651 for the march into England that terminated at the disastrous battle of Worcester. In 1651 the Castle was besieged and reduced by Monk, and the national records, which had been lodged here for safety, were seized and sent to London. At the time of the Union it was declared one of the four Scottish fortresses which were to be ever afterwards kept in repair, and in 1715 it afforded valuable support to the small force with which Argyll held the passage of the Forth against Mar and the Jacobites. In the subsequent rebellion in 1745-46, though the town wall had been repaired in the former year, the inhabitants made no resistance to the Highland army on its retreat, but having sent all their arms into the Castle, and obtained a promise that no man's person should be injured, and all articles required should be paid for, admitted the Jacobites within the town, when they kept their pledge so well that within two hours they had plundered the houses and shops of all the leading inhabitants opposed to their cause. They began to besiege the Castle, but though General Hawley's effort to cause them to raise the siege failed in consequence of the disaster at Falkirk, the attack was made in vain, and was hurriedly abandoned on the approach of the Duke of Cumberland's army. The only other historical event of general note connected with the town is the execution of Andrew Hardie and John Baird, who were in 1820 beheaded in front of the Town House for high treason, they having been two of the leaders of the Radical rising at BONNYMUIR. The Highland and Agricultural Society's Show has been held here in 1833, 1864, 1873, 1881.

The last sovereign who resided in the Castle was James VI., but in 1681 the Duke of York, afterwards James VII., was here with his family, including Princess —afterwards Queen—Anne; and in September 1842 the Queen and the Prince Consort were here on their way from Taymouth to Dalkeith, on which occasion her Majesty was presented with the silver keys of the burgh in due form and the Prince Consort was made a burghess. The Prince of Wales visited the town in 1859. Stirling gave successively the title of Viscount and Earl to the family of Alexander of Menstrie and Tullibody, William Alexander having in 1630 been created by Charles I. Viscount Stirling and Baron Alexander of Tullibody, and in 1633 he became Earl of Stirling and Viscount Canada. The title became dormant at the death of Henry, fifth Earl, in 1739, but there are still claimants. Distinguished natives of Stirling have been Dr John Moore (1730-1802), author of *Zeluco*, and father of General Sir John Moore; the Rev. George Robert Gleig (1796-1888), author; and Prof. Henry Drummond (b. 1851). Of those connected with the place by residence, besides the historical characters already spoken of, are George Buchanan (1506-82), who was tutor to James VI. during his early residence at the Castle; the Rev. Patrick Simpson, one of the ministers, who about 1600 published a History of the Church; the Rev. Henry Guthrie (1600-76), another of the ministers, author of *Memoirs of Scotch Affairs from 1637 to 1649*; the Rev. James Guthrie, his successor, one of the leading Remonstrants, who was executed in Edinburgh in 1661; Lieutenant-Colonel John Blackader (1664-1729), deputy-governor of Stirling Castle; the Rev. Ebenezer Erskine (1680-1754), one of the founders of the Secession Church; Dr David Doig (1718-1800), rector of the grammar school, a literary opponent of Lord Kames, whom Burns, who met him while at Stirling in 1787, describes as 'a queerish figure and something of a pedant'; and the Rev. John Russel (1740-1817), the 'Black Russel' of *The Holy Fair*, who was translated from KILMARNOCK to Stirling in 1800, and who is buried in the old churchyard.

Lines of Street, etc.—The Castle Hill proper and some other heights associated with it form a triangular group to the NW of the town, the apex of the triangle being to the W, and the rock occupied by the Castle buildings and the Esplanade in front lying along the SW side.

Along the NE side of the Castle Rock is the deep hollow known as Ballengeich, and beyond this is the undulating height known as Gowling or Gowan Hill. This was the site of one of the Jacobite batteries during the siege of the Castle in 1746. Near the N corner is the rounded grassy summit called the Mote Hill or Heading Hill, the

'sad and fatal mound!
That oft hast heard the death-axe sound,
As on the noblest of the land
Fell the stern headsman's bloody hand.'

It was the scene of the execution of the Duke of Albany, his two sons, and his father-in-law, the Earl of Lennox, in 1425; and as the Castle and Braes of Doune are visible from it, Albany's last glance must have been over his own wide domain. It seems to have been here also that in 1437 Sir Robert Graham and those of his associates in the murder of James I. who were executed at Stirling had an end put to their torments. The Mote Hill is known locally as Hurly-Haaky, a name said to be derived from an amusement indulged in here by James V, when he was young, and alluded to by Sir David Lindsay, who says

'Some harlit hym to the Hurlie-Hackit.'

It seems to have consisted in sliding down a steep bank in some sort of sleigh. Sir Walter Scott says the Edinburgh boys in the beginning of the 19th century indulged in such a game on the Calton Hill, 'using for their seat a horse's skull;' and as hawky or haaky is a Scottish word meaning a cow, it is possible that a cow's skull may have been used formerly for the same purpose. All this tract of ground is now open to the public, and walks beginning here extend round the base of the Castle Rock and along the wooded slopes to the SW of the old town, the principal path in this latter portion being the Back Walk with its fine trees. It was laid out in 1724 at the instigation of William Edmonstone of Cambuswallace. To the S of the Esplanade, and between it and the NW end of this walk, is a flat-bottomed hollow now occupied by part of the cemetery, but known particularly as 'The Valley,' and said to have been the ground used for tournaments and sports in the time of the Stewart Kings. A rocky eminence on the S side, called The Ladies' Rock, is traditionally the spot whence the ladies of the Court surveyed the feats of strength and skill. To the SW of this were the Royal Gardens, now simply laid out in grass, and with but few traces of the terraces and canal that once existed, though in this respect the Government have in recent years caused considerable improvement to be made. The canal seems to have been near the line of the modern Dumbarton Road. Near the extreme SW side of the gardens is an octagonal earthen mound with terraces and a depressed centre known as the King's Knot, and probably the place where the old game called The Round Table was played. The older name of the mound seems to have been also The Round Table, and it must have been here from a very early date, for Barbour speaks of King Edward and some of his followers who had in vain sought refuge at Stirling Castle after the battle of Bannockburn going

'Rycht by the Round Table away;'

so that it must have been there in his time; and Sir David Lindsay, in his *Farewell of the Papingo* (1539), also mentions it:—

'Adew fair Snawdown, with thy towris hie,
Thy Chapill Royall, Park, and Tabill Round.
May, June, and July wald I dwell in thee,
War I ane man, to helr the birdis sound
Qahlik doth agane thy Royall Rocke resound.'

To the S of the Knot is the King's Park, 2 miles in circumference, which was in the time of the Stewarts stocked with deer and partially wooded. It is now a stretch of fine sward used as a drill ground and public park. It was here that Argyll's army was encamped in 1715. From the higher part of the ground to the W there are excellent views. The racecourse in the north-

eastern part was formed in comparatively modern times, but has been disused for a considerable period.

The old town of Stirling, with its narrow and winding streets, lies along the ridge to the SE of the Castle. To the NE of the Esplanade are Upper and Lower Castle Hill and Barn Road, the former turning southward to Broad Street, at the E end of which St Mary's Wynd passes off to the N, while Bow Street on the S leads into Baker Street, the line of which eastward is continued by King Street. Parallel to Broad Street but farther to the S is St John Street, which is continued eastward by the very narrow Spittal Street, the latter, which is parallel to Baker Street, entering King Street near the centre of the S side. Running in the same line, from SE to NW, but on the opposite side of the ridge, is the Back Walk already mentioned; and passing northward from the E end of Baker Street is Friars' Street. The N and S line of streets begins at the E end of King Street, that leading to the N being Port Street. The part of the town just mentioned may be taken as that included within the precinct of the old town-wall, but there are now very extensive suburbs extending to the N and E, and S and SW. King Street is wide and well built, and its neighbourhood may be taken as constituting the business centre of the town, and Broad Street is also spacious; but the others present a curious mingling of modern and antique—houses of all ages, from the 15th century downwards, being to be found. The road to Airth passes off from the E side of Port Street, and along it is the small suburb known as The Craigs. The line of Port Street is continued to the S by Melville Terrace and Pitt Terrace, with a line of fine old trees along each side; and beyond these the road leads on to the villages of Newhouse, Belfield, and St Ninians, all of which are included within the parliamentary boundary. Between Melville Terrace and Newhouse on the W side of the road is Randolph Field, the traditional scene of Randolph's victory over the English cavalry under Sir Robert Clifford, who attempted to relieve Stirling Castle the day before the battle of Bannockburn. The line of Airth Road across Port Street is continued westward by the broad open Albert Place leading onward to Dumbarton Road. Albert Place, and the whole district between this and Melville Terrace, are occupied by villa residences, the principal thoroughfares being Abercromby Place, Clarendon Place, Victoria Place, Park Terrace, Snowdon Place, Drummond Place, Southfield Terrace, Gladstone Place, Glebe Crescent, and Allan Park.

From St Mary's Wynd, already mentioned, a line of newer streets passes northwards by Upper Bridge Street and Lower Bridge Street to the Old Bridge of Stirling; and from Lower Bridge Street a road passes round the end of the Heading Hill, and on west-north-westward to Callander. From the S end of the same street, Union Street passes NE to the Bridge of Stirling; while from the N end of Upper Bridge Street there is a line of thoroughfare—with the successive names of Cowane Street, Barnton Street, and Murray Place—southward to Port Street. From Barnton Street, Queen Street and the narrow Irvine Place lead north-westward to Upper Bridge Street and St Mary's Wynd, and at its N end Wallace Street strikes off northward to the Bridge of Stirling. Off Murray Place, near the centre of the E side, a short street leads to the railway station, and at the N end Shore Road branches off north-eastwards to the steamboat quay at the river. Most of these streets are wide, well-built thoroughfares, with minor streets passing off from them. The town of Stirling proper, from the Old Bridge on the N to Randolph Field on the S, extends over a distance of 1½ mile; and from the King's Knot east-south-eastward to beyond The Craigs, the distance is ½ mile. The length of the parliamentary burgh, however—which extends from the Forth below Kildean southward to beyond the village of St Ninians—is 3 miles; and the breadth at right angles to this most of the way, except on the extreme S, where it tapers to a point, is ½ mile.

As might be expected in the case of the town recog-

nised as the key of the Highlands, Stirling seems to have been well protected by a wall and ditch all round, except on the NW, where the Castle works were considered a sufficient defence. Part of the wall still remains at the E end of the Back Walk; and Port Street gets its name from the Old South or Borough Port or gate, which originally stood about 100 yards W of the line of the present street. After the extension of the town to the E in 1591, a new gate was formed farther to the E, but it was removed about the middle of the 18th century, in order to render the access to the town from the S more convenient. The road to the N was by St Mary's Wynd, leading to the Old Bridge. The early recognition of the value of the fords at Stirling, as affording a direct passage to the N of Scotland, has been already noticed, as has also the first bridge at Kildean, where the battle of Stirling Bridge took place. The present Old Bridge is fully 1 mile to the ESE of this; and though the date of its erection is unknown, it must, judging by its style, have been built about the end of the 13th or the beginning of the 14th century. It has four arches, and is narrow and high in the centre. It had formerly two low towers at the centre, and two small flanking towers and iron gates at each end. In 1745 the south arch was destroyed by General Blakeney, governor of the Castle, in order to embarrass the Jacobite army; and when the Duke of Cumberland's forces passed northward in the following year they were delayed here till the damage was roughly repaired. About a hundred yards farther down the river is the wider and more convenient modern bridge, erected in 1831, from designs by Robert Stevenson, at a cost of £17,000; and about the same distance farther down still are the viaducts, crossed by the main line of the Caledonian railway and by the Stirling and Dunfermline branch of the North British system.

The Castle, &c.—The Castle is approached by Broad Street and Mar Place, which lead to the spacious Esplanade or parade-ground, on the NE side of which is a gigantic statue of King Robert Bruce, erected in 1877 on a spot from which are visible the fields of Stirling Bridge and Bannockburn. The statue, which is 11 feet high, and represents the king in chain armour looking towards Bannockburn as he sheathes his sword, was executed by Currie. The entrance to the Castle is in the centre of the curtain wall at the NW end of the Esplanade, the outer wall being protected by a ditch with a drawbridge. The inner ditch and entrance are commanded by the Overport Battery, while the bomb-proof structure on the left, known as Queen Anne's Battery, with the adjacent unfinished works, was erected in Queen Anne's reign—whence the name—when the Castle was enlarged. The Queen's initials and the date, 'A. R. 1794,' may be seen on the second arch. To the N are the gun sheds, and adjoining them on the NE is the Spur or French or Ten-gun Battery, built by the French engineers of Mary of Guise in 1559, and overlooking Ballengeich and the Gowan Hill. At the SW end of the gun sheds is the old entrance, with two towers—not now so high as they formerly were—and a flagstaff. To the left of it is the Princes Walk, and inside the entrance is the open space called the Lower Square, on the NE side of which is the Grand Battery, while to the left is the Palace. This building, commenced by James V. and finished by Queen Mary, surrounds a central quadrangular court, and is very fantastic in its architecture—the N, E, and S sides having five or six curious pillars, formed by emblematic figures standing on carved balustrade columns, with pediments supported by grotesque figures. All the statues are much defaced, but those on the E side, which is the most richly—or wildly—ornamented, are supposed to represent Diana, Venus, Omphale, Perseus, and other mythological personages. Those on the N side include figures of James V. and his daughter, and one showing Cleopatra with the asp on her breast. The statue of James represents him with a bushy beard and wearing a hat. Over him is an allegorical personage holding a crown and a scroll with the kingly title; and he is attended by a royal lion and a cup-bearer, the

former crouching at his feet, and the latter a beardless youth holding forth a cup. In the small interior square is the Lion's Den, said to have been the place where lions were kept for the royal amusement. Defoe waxes quite eloquent in praise of this building: 'King James the Fifth,' he says, 'also built a noble Palace here, adorn'd without with Pillars finely engrav'd, and Statues as big as the Life at the Top and Bottom. In this Palace is one Apartment of Six Rooms of State, the noblest I ever saw in Europe, both in Height, Length and Breadth: And for the Fineness of the Carv'd Work, in Wainscot and on the Cieling, there's no Apartment in Windsor or Hampton-Court that comes near it. And at the Top of this Royal Apartment, the late Earl of Mar, when he was Governor, made a very convenient Apartment of a Dozen Rooms of a Floor, for the Governors to lodge in. Joining to the Royal Apartments aforementioned, is the Great Hall of Audience, roof'd at the Top with Irish Oak like that of Westminster-Hall at London: And in the Roof of the Presence-Chamber, are carv'd the Heads of the Kings and Queens of Scotland.' Though Defoe's description is not quite clear, it is evident that the latter part of it refers not to the palace but to the Parliament Hall mentioned below. The oak carvings of the heads of the kings and queens, known as 'the Stirling heads,' were taken down in 1777, as they had become insecure, and one of them had fallen on the head of a soldier. The burgh prison afforded them a place of refuge during 40 years of subsequent neglect, and since then they have been scattered. A few are preserved in the Smith Institute. The spacious rooms of the palace itself have since Defoe's time also suffered badly, some of them having been partitioned off as barrack stores, and the others for similar purposes.

To the N of the Palace is the Upper Square, the S side of which is formed by the Palace itself. On the E side is the Parliament Hall or Parliament House, erected by James III. It was originally a fine building, the hall proper having been 120 feet in length, but it has, like the other buildings, suffered greatly by being converted into barrack rooms. On the N side of the square is the building erected by James VI. as a chapel, but used as a store, and generally called the Armoury. It at one time contained 15,000 stand of arms and many pieces of old armour, but most of these have now been removed to the Tower of London. There seems to have been a chapel in the Castle founded by Alexander I., and attached to the monastery at Dunfermline, and the *Capella Castellì de Strivelin* is mentioned in a deed of David I. (1124-53), and in another in the reign of William the Lion (1165-1214). What the original dedication was is unknown, as the earlier documents mention only the King's Chapel, but in the 14th century, perhaps earlier, there is mention of the chapel of St Michael, which may probably date from the time when St Malachi or Michael—the Irish ecclesiastic—visited David I. at Stirling Castle and healed his son Prince Henry. The chapel was rebuilt in the early part of the 15th century, but it was not till the time of James III. that it became a foundation of importance. That monarch seems to have added to his other artistic tastes a great love of music, and this led him to determine that St Michael's Chapel should be rebuilt and constituted both as a royal chapel and as a musical college, and in the High Treasurer's accounts for 1473 and 1474 we find a number of entries of expenses in connection with the new building. He also endowed the new foundation with the rich temporalities of the Abbey of Coldingham, the annexation of which interfered with the interests of the powerful family of Home, and so led to the downfall and death of James himself. The chapel thus erected was the scene of the penitence of James IV., who, after the victory at Sauchie, 'daily passed to the Chapel Royal, and heard matins and evening-song; in the which every day the chaplains prayed for the king's grace, deploring and lamenting the death of his father; which moved the king, in Stirling, to repentance, that he happened

to be counselled to come against his father in battle, where-through he was wounded and slain. To that effect he was moved to pass to the dean of the said Chapel Royal, and to have his counsel how he might be satisfied, in his own conscience, of the art and part of the cruel deed which was done to his father. The dean, being a godly man, gave the king a good comfort; and seeing him in repentance, was very glad thereof. Whether from this penitence or from a devotion to music itself, James IV. carried out his father's purposes, and endowed the foundation with large revenues. The deans of the chapel, who were first the provosts of Kirkheugh at ST ANDREWS, afterwards the bishops of Galloway, and eventually the bishops of Dunblane, possessed in their capacity as deans an episcopal jurisdiction, and in 1501 the chapel was erected into a collegiate church. The chapel erected by James III. seems, however, to have been a poor structure, for in 1583 mention is made that 'the thak thairrof resavis weit and rane in sic sort that the Kingis hienes may nocht weill remane within the same in tyme of weitt or rane,' and as 'the ruif thairrof hes bene wrang wrocht mekil under square that the thak of the same is aff skailze, and is ane werray licht thak,' and as there are 'many kypillis thairrof broken, swa it is necessar to put ane new ruif upone the Chapell,' and so on, the whole structure being evidently in very ruinous condition. Nothing was, however, done till 1594, when James VI. pulled the old building down and erected on its site the very poor erection now standing, which was the scene of the baptism of Prince Henry. Now used partly as a store, and partly as a resting and refreshment room for visitors, it contains some old arms and armour from the Tower of London. The buildings on the SW side of the Upper Square are partly older in date than the others, some of them having been erected in the end of the reign of James I. They are now used as officers' quarters and offices, the officers' mess-room being what is known as Queen Mary's Boudoir. Over the gable windows are the letters M. R., by a crown and thistle, and over another window the monogram M. R., with the date 1557. A passage to the W of the Chapel Royal leads to a garden, opening off which is the Douglas Room or King's Closet, the reputed scene of the murder of the Earl of Douglas by James II. The skeleton of an armed man found in the garden in 1797 is supposed to have been that of Douglas. This portion of the Castle was destroyed by fire in 1855, but was, in 1856, restored from designs by R. W. Billings, in keeping with the old design. In the small closet opening off the room is a stained-glass window with the Douglas arms and the motto, 'Look Sicker.' A small door opening off at one side leads to an underground passage, which is supposed to have come out at Ballengeich. Round the cornice of the closet is the inscription: *Pie Jesus Hominum Salvator Pia Maria Salvete Regem,* and beneath, *Jacobus Scotor. Rex.* In the Douglas Room itself may be seen the communion table used in the Castle by John Knox, an old pulpit from the Chapel Royal, an old clock from Linnlithgow, several personal relics of the Stewart sovereigns, and a number of pikes used at the Bonnymuir rising in 1820. An ineffectual attempt was made in 1893 to obtain a special grant from Government for a scheme of restoration which included the Chapel Royal, the Parliament House, the Palace, and the towers of the original gateway. From the ramparts on the N side of the garden there is a magnificent view. The best is from what is called Queen Victoria's Look-out at the NW corner—though the Queen saw but little when she was there, as the day was misty—but good views may also be obtained from Queen Mary's Look-out on the W, and from the Ladies' Look-out Battery SW of the Palace, where the rock is steepest. To the N of the buildings just described, but at a lower level, is a rampart-protected plateau on which are the magazines. The Castle is now used as an infantry barracks, forming the headquarters of the 91st regimental district and the dépôt for the Argyll and Sutherland Highlanders, formerly the 91st and 93d regiments, with whom are associated

as 3d and 4th battalions the Highland Borderers Militia (Stirling) and the Royal Renfrew Militia (Paisley).

To the SE of the Esplanade is the spacious quadrangular edifice called Argyll's Lodging. It is Jacobean in style, and was built in 1630 by the first Earl of Stirling. On his death in 1640 it passed into the possession of the Argyll family, and was the temporary residence of Charles II. in 1650, of the Duke of York in 1681; was the headquarters of the Duke of Argyll in 1715; and was occupied by the Duke of Cumberland in 1746 when he was on his march to the north. It was purchased by the government in 1799 and converted into a military hospital, for which it is still used. Above the doorway are the arms of the Earl of Stirling, with the mottoes *Per mare per terras*, and *Aut spero aut sperno*. Above some of the windows is the bear's head of Argyll. Farther to the S is the ruin known as Mar's Work, the remains of the palace built by the Earl of Mar in 1570, and a notable specimen of the work of that age. Sir Robert Sibbald says that 'the Earl lived splendidly here,' and that James VI. and his Queen resided in it till a portion of the Castle was got ready for their reception, but of the buildings which once surrounded a central quadrangular court only the front portion now remains. Over the entrance gateway are the royal arms, while on the towers at either side are those of the Earl and his wife. As the stones used were taken from the Abbey of CAMBUSKENNETH, the noble builder was at the time charged with sacrilege. The inscriptions on three tablets built into the wall seem to give his answer. The first is inscribed—

'I pray al luikaris on this luging
With gentil e to gif thair juging.'

Another—

'The moir I stand on oppin hitht,
My fauntis moir subject ar to sicht.'

And the third—

'Esspy speik furth and spair nocht,
Considair weil I cair nocht.'

The 'luging' became in its turn a quarry, whence stones were procured for a churchyard wall at St Ninians, and had it not been that it sheltered the market-place from the west winds it would probably have been entirely removed. Opposite Argyll's Lodging was a house with a projecting turret, said to have been the residence of George Buchanan when he was here during the minority of James VI. Regent Morton's house occupied a site near the S corner of Broad Street; and E of Cowane's Hospital is a house said to have belonged to the Earl of Bothwell, and called Bothwell House or Bogle Hall. At the foot of Broad Street is a building called Darnley House, bearing a tablet with the inscription, 'The nursery of James VI. and his son Prince Henry.' The correctness of this inscription has lately been called in question, as both James and his son had their nurseries in the Castle, and the removal of the tablet, a recent erection, has been urged. At the S end of Bow Street was a house used as the mint. It was removed in 1870. Many of the houses in Broad Street and Baker Street are characteristic specimens of old Scottish architecture, and several of them have the quaint mottoes which our ancestors of the 16th and 17th centuries were so fond of. One at least takes a somewhat unusual form:—

'Heir I forbear my name or armes to fix,
Least I or myne shoidd sell these stones and sticks.'

On another house is a stone tablet—possibly older than the house itself—with a tailor's scissors, and the inscription, 'This hous is foundit for support of ye pair be Robert Spittal, tailyour to James ye 4th. Anno 1580, R. S.'

Other Public Buildings.—The Old Town House (now the burgh police buildings), built in 1701, is at the NW end of Broad Street, and contains the burgh court rooms and the police and parochial board offices. There is a tower with an illuminated clock and containing several good bells. The oldest has the inscription, 'The Counsell bell of Sterline. Ovdorogge Fecit, 1656;' another,

'Sit nomen Domini benedictum. Petrus Hermony me fecit. Amstelodami, A.D. 1669.' There is also a chime of fifteen bells, one having the date 1729. In front stood formerly the town cross, formed by a pillar surmounted by a unicorn, and raised on four steps. It was removed in 1792, but the unicorn was preserved, and now surmounts the restored 'mercat croce,' which was erected in 1891 on or near the site of the ancient cross. This was the place of public execution, and it was here that Archbishop Hamilton was executed in 1571, that two poor rhymesters were hanged in 1579 for writing a satire on Regent Morton, and that Hardie and Baird were beheaded in 1820. Behind the Old Town House are the old county buildings and jail. The new Town Buildings—formerly the Athenaeum—containing the council chamber and corporation offices, are at the junction of Baker Street and Spittal Street. The style is poor Italian, and there is a spire. Over the entrance is a statue of Sir William Wallace, executed by Handyside Ritchie at the expense of the late Mr William Drummond. The new County Buildings, on the E side of Barnton Place, were erected in 1874-75 at a cost of over £15,000. The building is modified Scotch Baronial in style, and has a frontage of 120 and a depth of 80 feet, with turrets at the angles, and an ornamental porch at the main entrance. It contains a fine room for the judiciary courts, 56 feet long, 36 wide, and 26 high; sheriff and justice of peace court rooms, and the various county offices, including the headquarters of the county police. In front of the building stands the handsome fountain erected by public subscription to commemorate the Jubilee of the Queen. The military prison is on a commanding site to the SW of the Old Town House, and is a prominent castellated building erected in 1846-48 as the county prison at a cost of more than £12,000. The grounds cover a space of about 1 acre.

The Public Halls in Albert Place, between Port Street and Dumbarton Road, were erected in 1881-83 by a joint-stock company at a cost of about £12,000. The internal arrangements are convenient and good. The east wing has a front of 98 feet, and the side to Albert Place a length of 157 feet. The large hall is 80 feet long, 67 wide, and 40 high, with accommodation for an audience of 800 in the area and 500 in the gallery. The platform at the W end is 4 feet 6 inches from the floor, and is 48 feet wide and 33 deep. Complete preparations have been made for theatrical performances, and the organ, constructed by Willis of London, cost £2300. The smaller hall to the E has accommodation for 300 persons. Over the centre doorway are the burgh arms. The building occupies the site of the old royal fish ponds. Some distance farther W is the Smith Institute, a plain but well designed building, Italian in style, erected in 1878-74 at a cost of over £6500. This building is due to a bequest of £22,000 from T. S. Smith, formerly of Glassingall (1817-69), along with all his own paintings and those of other artists in his possession at the time of his death. Mr Smith intended to erect and endow the institution in his own lifetime, but this was prevented by his sudden death, and the design has been carried out by his trustees. The building contains two picture galleries 105 by 43 feet, and 43 by 27 feet; two museums measuring respectively 148 by 80 feet, and 44 by 24 feet; a library and reading-room 50 by 28 feet, besides offices and stores. Besides the founder's own works the galleries contain good pictures by John Phillips, David Cox, David Cox, jun., Harding, Maris, Ten Kate, George Cole, and James Drummond. In the museum are a number of interesting objects, including the Stirling Jug, which, as the standard of the old Scotch pint, has been in the keeping of the town council since 1457, and possibly from an earlier date; the old Linlithgow wheat firlet, made of wood hooped with brass, and adjusted at Edinburgh in 1754 to contain 21 pints and 1 mutchkin of the Stirling Jug, as settled by the Act of Parliament in 1618; or 73 lbs. and 3 oz. French Troyes weight of Edinburgh fountain water. It contains 2197 '34 cubic inches. There are also the standard bushel (1824), the chair of the Rev. James Guthrie

already mentioned, the old stocks and jugs, the axe and mask used at the execution of Baird and Hardie in 1820, and in the vestibule are several of the old oak carved 'Stirling Heads' from the Castle. The reading-room and library have the ceiling finished in the style of the old roof of the Parliament Hall, and ornamented with very good copies of the heads mentioned above; and they contain the books belonging to the old Stirling Library (1804), and those since acquired by the trustees of the late John Macfarlane of Coneyhill. The Macfarlane Library and Museum was opened in 1882, and the trust funds admit of a considerable sum being spent yearly on books. Cowane's Hospital, now the Guild Hall, high up on the ridge to the N of the Smith Institute, is a quaint old building of 1639. It owes its first name to a bequest of John Cowane, merchant in Stirling, and Dean of Guild from 1624 to 1630, and from 1631 to his death in 1633, who bequeathed £2222 sterling, or 'fortie thousand merkis usual money of this realm, to be employed on annual rent for building and erecting ane Hospital or Almshous wtin. the said Burt to be callit in all tyme cumyng Cowane's Hospital.' Twelve decayed members of the Guildry were to be maintained in the hospital, but it has been found more convenient to abandon the monastic system, and out of the annual income, which now amounts to over £3000, yearly allowances are paid to both male and female members of the Guildry varying from 8s. to 10s. per week. There are about 140 pensioners, and the patrons are the town council and the minister of the first charge. Over the doorway is a statue of the founder, and the inscription, 'This Hospital was largely provided by John Cowane, Deane of Gild, for the Entertainment of Decayed Gild Breithers. John Cowane, 1639. I was hyngrie and ye gave me meate, I was thirstie and ye gave me drinke, I was a stranger and ye tooke me in, naked and ye clothed me, I was sicke and ye visited me. Mat. xxv. 35.' Elsewhere on the E are—'And he which soeveth bountifully shall reape bountifully. 2d Corinth. 9, 6. John Cowane;' and 'He that has mercie on the poor lendeth unto the Lord, and that which He Hath given He will pay him agane. Prov. 19, 17. John Cowane.' The great room now used as the Guild Hall has in the E end a stained-glass window in memory of the founder. It contains a number of interesting objects, including palmers' hats, several old Bibles, a fine old carved oak chest bearing to be a gift by John Cowane but having a date after his death, a pulpit from the East Church, the old guildry and town flags, the standard wine gallon of 1707, with the crown, the initials A.R., and 'Anno Regni 7^{to},' the old standard ell of 45 inches, the new yard and ell which 'was adjusted at Edinburgh 26th of Feby. 1755 with great care by the Rev^d. Mr Alex^r. Bryce;' a set of old standard weights, running from $\frac{1}{2}$ lb. to 28 lbs., and a new set, dated 1707, running from $\frac{1}{2}$ oz. to 28 lbs. The Guildry Arms is the figure 4 reversed, with the inscription around it, 'Instituted by Alexander I., 1119.' Alexander II. in 1226 gave to the burghesses of the town 'ane mercat day, to witt the Saturday of everie week,' and 'lykways that they shall have their gildrie of merchds. excepting out of the same cloathe wakers and dyceplayers. We discharge and prohibit lykways stricklie that no man dwelling within the sherifdome of Stirling without the burt shall make any cloathe ather litted or sohome after it is waked or cause make the same except our burghesses of Stirling who are of ye gildrie of ye merchds.' This charter is known only from a confirmatory one by David II., but the latter monarch granted also in 1364 a general charter in favour of all the burghesses of Scotland, which the Stirling guildry were successful in enforcing in 1697 in a lawsuit in which it is recorded that they not only produced David's general charter but also 'the great Ring gifted by him to them.' This ring, which is unique, and was probably gifted to the brethren in 1360 when King David granted the charter to the burgh, still exists, and is a handsome gold hoop, with five stones set in the form of a cross. The whole weighs

half an ounce, and of the stones only a ruby and a garnet are real. On the outside of the hoop is the inscription in bold Roman capitals, 'Yis for ye deine of ye geild of Stirling.' It seems to have been originally intended to be worn on the forefinger, but it is now suspended from a chain, and used as one of the badges of the Dean of Guild for the time being. Adjoining Cowane's Hospital is a good public bowling-green and a terrace on which are two of the cannon captured at Sebastopol. The Trades Hall, off the SW side of Spittal Street, is used as a meeting-place for the members of the incorporated trades, and has become associated with Spittal's Hospital. This latter, the oldest of the Stirling charitable endowments, originated with Robert Spittal, tailor to James IV., who about 1530 is supposed to have conveyed certain lands to be held in trust to the town council, and the income derived from them is applied to the support of the poor of the burgh. The plan of the beneficiaries wearing a particular dress and all living together has here also been abandoned, and the annual income, which now amounts to about £900, is divided among them in allowances varying from 2s. to 7s. weekly. In the hall is a tablet with the inscription, 'In order to relieve the distress of useful members of society, the ground within this wall, with the adjoining Hospital and lands for supplying it, were given to the Tradesmen of Stirling, in the year 1530, by Robert Spittal, who was Tailor to King James the Fourth of Scotland. He likewise gave part of his wealth for building useful bridges in this neighbourhood. Forget not, reader, that the scissors of this man do more honour to human nature than the swords of conquerors. To commemorate his benevolence the Seven Incorporated Trades of Stirling have erected this tablet.' Spittal seems to have been fond of building bridges; that over the Teith at Doune is only one of those erected by him. Stirling has a number of other charitable funds of a like character, which may in this connection be noticed here. Allan's Hospital was founded by John Allan, a writer in Stirling, in 1724, 'for the maintenance and education of the indigent male children of tradesmen belonging to the Seven Incorporated Trades of Stirling and others.' The intention here, too, was that the boys should live in a building to be erected for that purpose, and this was provided; the annual revenue is about £800. Cunningham's Mortification (1808), with an income of about £250, was bequeathed 'for maintaining, clothing, and educating more poor boys of the gildry and mechanics of Stirling, and putting them to trades or business.' Both these institutions, along with Adamson's and M'Laurin's bequests, are now merged in the Stirling Educational Trust. On the SW side of Spittal Street, near the centre, is the Stirling Royal Infirmary. The building which it occupies, originally the Commercial Bank, was enlarged in 1883 at a cost of £1600. About 200 indoor and 3000 outdoor patients are treated every year. The poorhouse, erected in 1856 at a cost of £7000, is in Union Street, near the extreme N of the town. There is accommodation for 176 paupers. The Lunatic Asylum for the Stirling district is at LARBERT, and with an addition of 1893 has been described in that article. To the E of the Infirmary is the Corn Exchange, erected in 1838, where the weekly Friday markets are held. The path along the side leads through an opening in the old city wall to the Back Walk. At the corner of King Street and Murray Place are the former premises of the Stirling Tract Depôt, erected in 1863 at a cost of £5000 by Mr Peter Drummond, and used also as the office of the well-known *British Messenger* and other religious publications. Over the windows of the ground floors are carved heads representing Luther, Calvin, Zwingle, Wyklif, Knox, Guthrie, Whitefield, and Chalmers. The trustees having latterly been hampered in their enterprise by the increasing inadequacy of the accommodation provided in this building, in 1887 erected more commodious premises in Dumbarton Road. Immediately behind the old premises between Murray Place and King Street, is Crawford's Arcade,

Italian in style, built in 1881-82, with access to both streets, and containing a number of shops and a theatre. Several of the banks are also good buildings.

Churches and Schools.—The High Church, comprising the East and West parish churches, stands at the NW end of St John Street to the W of the Old Town Hall. The division into two churches took place in 1656. The building, which is 200 feet long, and has a massive square tower 90 feet high at the W end, consists of two portions of very different appearance and age. That to the W is the older and finer, and dates probably from the middle of the 13th century. The date generally given is 1494, but that is only the year when the monastery of the Greyfriars was founded by James IV., the building (including the Church of the Greyfriars) being erected on what is now the site of the High School. It had no connection with the parish church, of which the massive round pillars of the four bays to the W, the flutings on the two pillars at the E end, and the style of the capitals and bases, as well as the appearance of the tower and the clerestory windows, all point to a date during the early period of the Early English style. The later appearance of the tracery of the aisle windows may be due to subsequent alteration. The large window at the NW corner was originally a doorway leading to a small chapel now unroofed and nearly level with the ground, but which at even a recent date had a roof on it. It is traditionally known as Queen Margaret's Chapel, and the rose and thistle on either side of the present window seem to indicate an English Queen Margaret. The wife of James IV. has been adopted as fulfilling the condition, but this window is so unlike those of the East Church, which dates from her time, that the identification of the Queen Margaret of the chapel with the wife of James IV. may probably be set aside as due merely to the common date of 1494. If this be so, the only queen who will answer is Margaret, the wife of Alexander III., and this brings us again to a date corresponding with the architectural style of the church. Two churches in Stirling are spoken of in the time of David I., one of them being the chapel-royal, which was dedicated by Alexander I., and the 'vicar' of the 'Kirk of Stirling' is mentioned in 1315, and in the time of David II., and there are also notices of it in the reigns of Robert II. and Robert III., when it is designated as the church of the Holy Cross of Stirling; the present West Church is in reality this parish church rebuilt during the reign of Alexander III. The fluted pillars at the E end may indicate the greater amount of elaboration always bestowed on the part nearest the altar. The church seems to have suffered injury by fire in the beginning of the 15th century, and grants for repairs were made by the exchequer in 1407 and 1410, and there is fresh mention of 'Ecclesie Sancte Crucis de Streveling' in 1450; while in the treasurer's accounts for 1500-1 there is a charge for repairing the windows of the Greyfriars Church at Stirling, a word which would hardly have been used had the church been new, and the windows in process of insertion for the first time. The choir, which now forms the East Church, was begun in 1507, and additions were made to it by Archbishop James Beaton (1523-39), the eastern window and chancel still retaining the name of Beaton's Aisle. The transept has never been erected. In the tower, from the top of which there is an extensive and beautiful view, are four bells, one of which, remarkable for its fine tone, is supposed to date from the 14th century. The church is connected with many important historical events. It was here that in 1543 the Regent Arran publicly renounced the Protestant religion; and here, too, in the following year, the convention met that appointed Mary of Guise regent. Both the Greyfriars and Blackfriars monasteries were totally destroyed by the Reformers in 1559, but the parish church, though 'purged' of its images, was not otherwise injured, and so was all ready, in 1567, for the coronation of James VI., then thirteen months old. In 1651 while General Monk was besieging the Castle, the tower was one of the points of vantage seized by his soldiers, and the little bullet pits

all over it show how hot must have been the fire directed against its holders. It was also held by the Highlanders in 1746, and the bells rang out a merry peal in honour of the victory of Falkirk. It is wonderful that Cumberland did not cause them to be broken. The West Church, which was extensively repaired in 1816, contains about 1100 sittings. Underneath the W window behind the pulpit are marble tablets erected by the town council to William Drummond, Alexander Cunningham, John Allan, John Cowane, Robert Spittal, John M'Gibbon, and Thomas Stuart Smith—benefactors of the town. There are a number of other monuments—one being to Lieutenant-Colonel John Blackader (1664-1729), deputy governor of Stirling Castle—and a number of stained-glass windows have been inserted. Ebenezer Erskine was one of the ministers. The East Church, which contains about 1100 sittings, was improved in 1808, and underwent thorough repair in 1869, since which time a large number of stained-glass windows have been introduced. In 1890 an organ was introduced, and a carved communion table and chair and baptismal font were presented to the church. One of the ministers was James Guthrie. An institute (1884) in connection with the East Church stands in Spittal Street, and cost, with the site, £1200. To the W of the High Church is the old churchyard with several noteworthy stones, the oldest bearing date 1523. Many of them have the reversed figure 4, showing that it marks the grave of a guild brother. One has the quaint inscription:—

'Our life is but a winter day:
Some only breakfast, and away;
Others to dinner stay, and are full fed.
The oldest man but sups, and goes to bed.
Large is his debt that lingers out the day;
He that goes soonest has the least to pay.'

To the N of the churchyard is the beautiful new cemetery, occupying 'the Valley' already mentioned. In both 1745 and 1746 the ground here was selected by the Highland army as the site of batteries. In the cemetery there are statues of John Knox, Andrew Melvil, Alexander Henderson, James Renwick, James Guthrie, and Ebenezer Erskine, and a fine marble group, executed by Handyside Ritchie, commemorative of the heroism of the Wigtown Martyrs. At the base of the statue of Knox is the Rock Fountain, and on the N side of the ground is the structure known as the Star Pyramid or Salem Rock, with Scripture texts and symbolical designs. To the W of it is a granite cross, erected to the memory of the officers and men of the 75th (Stirlingshire) Regiment who fell in the Indian Mutiny. This portion of the ground was purchased and presented to the town by the late Mr William Drummond (1792-1868), to whose generosity are also due the Star Pyramid, the statues of the heroes of the Reformation, and the memorial of the Wigtown Martyrs. Mr Drummond is buried near the pyramid.

A Dominican monastery, founded by Alexander II. in 1233, with a church and burying-ground, stood to the E of the present Friars' Street (formerly Friars Wynd), outside the old city wall, and on the site now occupied by the National Bank. It was here that Albany and his sons and the Earl of Lennox were buried, as also the pretended Richard II. The buildings, which formed the residence of Edward I. in 1298, were destroyed in 1559, but the churchyard was used till comparatively modern times, though the ground is now all appropriated for other purposes. A chapel dedicated to St Ninian stood near the South Port; and a copious spring near it, called St Ninian's Well, furnished the town till 1774 with the greater part of its necessary supply of water. Another important spring was the Butts Well behind the Smith Institute.

The North Parish Church, on the E side of Murray Place, erected in 1842, is a good Norman building, with a low, massive, square tower. It contains about 1100 sittings. In 1889 it was enlarged, a chancel added, and an organ introduced. The hall below the Church, which had been used as an infant school since the Disruption, was at the same time acquired from the school managers

for church purposes. Marykirk, in St Mary's Wynd, formerly a mission church belonging to Miss MacLagan of Ravenscroft, but now belonging to the Church of Scotland, has 481 sittings. The North Free Church, on the W side of Murray Place, is a good Early English building, with tower and spire, erected soon after the Disruption, and containing about 1000 sittings. The South Free Church, off the SW side of Spittal Street, has 760 sittings. The Craigs Free Church, which was, down to 1876, a Reformed Presbyterian church, was originally built in 1783, but was renovated in 1874. It contains 320 sittings. The Free West congregation erected a new church in Cowane Street in 1831-82 at a cost of £3000. It is a handsome building, with a tower having a four-dial clock and a bell. The Erskine United Presbyterian Church is within an enclosed plot on the SW side of St John Street, and was erected in 1826 in room of a previous church of 1740. It was considerably improved in 1876, and is a Romanesque building, with 1400 sittings. In the centre of the plot in front is a small mausoleum marking the burial-place of Ebenezer Erskine. This spot was, in the old church, immediately in front of the pulpit, but the new church was placed farther back. Here also has been erected, at a cost of £500, a monument to the memory of the same divine. Viewfield U.P. church, on a small eminence at the corner of Barnton Street and Irvine Place, is a plain Gothic building, with a spire, erected in 1860 in place of a previous church. It contains about 750 sittings. Allan Park U.P. church, on the N side of Albert Place, is an Early English building, with tower and spire; was erected in 1865-67; and contains about 1000 sittings. The Congregational church, on the W side of Murray Place, reconstructed in 1842, is a good Tudor building, with 400 sittings. The Baptist church, on the E side of Murray Place, erected in 1854, has a good Gothic front, and contains 380 sittings. The Wesleyan church, on the SW side of Queen Street, is a plain building, with 550 sittings. The Episcopal church (Holy Trinity), in Albert Place, to the W of the Public Halls, is a fine First Pointed building, erected in 1876-78, at a cost of £10,000, from designs by Dr Rowand Anderson, and containing 546 sittings—somewhat of a change since Bishop Gleig was incumbent, towards the close of the 18th century, when the congregation of 50 met in a room in an old house in Spittal Street. The Roman Catholic church (St Mary's), in Irvine Place, is a Gothic building, erected in 1883, and containing 500 sittings.

The High School is a handsome Elizabethan building, designed by Messrs Hay of Liverpool, and erected in 1855 at a cost of about £5000, of which sum £1000 was contributed by Colonel Tennent, £1000 by the town-council, and £3000 by public subscription. The original design embraced buildings round three sides of a quadrangle, but of these only the portion facing the street, and containing class-rooms, has been erected—the other two sides, intended to contain a hall, lecture-room, and museum, yet remaining unbuilt. Instruction in the usual branches is given by a rector, a master for English, two for mathematics and arithmetic, two for classics, two for modern languages, two for art, two for the sciences, one for music, one for dancing, and one for gymnastics. In connection with the High School there is an Organized Science School, also an elementary High School. The High School superseded the old burgh schools for English, classics, and mathematics. It is one of the secondary schools scheduled under the Education Act, and is now managed by the burgh school board (9 members), under whom are also Abbey, Allan's, Craig's, Raploch, St Ninian's, and the Territorial schools, which, with accommodation for 69, 846, 650, 57, 360, and 552 pupils respectively, had, in 1893, attendances of 50, 567, 550, 31, 258, and 421, and grants of £47, 5s., £561, 1s. 6d., £567, 4s. 1d., £31, 4s. 6d., £268, 17s., and £426, 3s. 6d. In the same year the elementary department of the High School had an attendance of 178, and a grant of £191, 1s. 6d. There are also a School of Art in connection with South Kensington, Episcopal and Roman Catholic day schools, and two

industrial schools—one for boys and one for girls. The Territorial school, a good building beside the West Free Church, was greatly enlarged in 1884.

Trade, etc.—Cotton manufacture in connection with the Glasgow cotton trade was largely carried on in the end of the 18th and the beginning of the 19th century, but has since declined. The manufacture of shalloons was carried on to a considerable extent, so far back as the end of the 16th century, chiefly for export to the Netherlands, but it has long disappeared, having been replaced shortly after the beginning of the 18th century by the manufacture of tartans. This industry flourished till about 1750, but thereafter fell off so much that in 1792 the weaving of tartans was almost entirely neglected, though the making of carpets was extensively carried on. It revived again, however, about 1820, in consequence of the great interest in the Highlands that sprang up consequent upon the publication of *Waverley*, and again made great progress about 1865; so that along with the kindred branches of tartan-shawls, tweeds, wineceys, carpets, and yarn-spinning and dyeing, it is now the principal manufacture of the neighbourhood. The preparation of leather, brewing, coach-making, and the manufacture of agricultural implements, perambulators, and iron bedsteads, are also carried on. There is also a large wool factory. The quay, or rather jetty, is about 1 furlong NE of the main part of the town at the point where Shore Road touches the river, but the shipping trade is now almost entirely superseded by the railway traffic. The port has, since 1707, been a creek under Allos, and the depth of water at the wharf is 5½ feet at neap tides, and 11 feet at spring tides. A steamer plies to and from Leith daily from April to October, but its sailings are very inconvenient, as they require to be regulated by the hour of high water, and the windings of the Forth make the voyage rather tedious. The railway station, near the centre of the E side of the town, is, as has been already remarked, an important centre of communication. A tramway line from Port Street to Bridge of Allan was constructed in 1874.

Municipality, etc.—Stirling dates as far back as the 12th century, although there is no charter extant earlier than that granted by Alexander II. in 1226, and the original of that deed is lost, but its terms are engrossed at full length in the earliest charter which is now in existence—that granted by David II. in 1360. Confirming and extending deeds have been granted by later monarchs, the last and governing charter being that given by King Charles I. at Holyrood in 1641, in which the burgh is referred to as ‘ane of the maist ancient burghes of this his Hienesse Kingdom of Scotland, being erected before the days of umquhile King Alexander.’ It was one of the four burghs—the others being Edinburgh, Berwick, and Roxburgh, or, when Berwick and Roxburgh were in the hands of the English, Edinburgh, Linlithgow, and Lanark—constituting the *Curia Quatuor Burgorum*, a partly legislative, partly judicial, body, which

afterwards grew into the Convention of Royal Burghs. The older of the two burgh seals shows a bridge of seven arches, with a cross rising over the centre one, with Christ extended. Above His right hand is a star, and above His left a crescent. To the right of the cross are three soldiers with bows, and on the left three armed with spears. The motto is, *Hic armis*

On the opposite side of the matrix is a castle with trees, and round about is

the motto, *Continet hoc in se nemus et castrum Strivelinse*. The one now in use is smaller, and shows a wolf couchant over a rock, and the motto is *Oppidum Stirlingi*. The register of sasines commences in 1473, and the regular series of Council records in 1597, though some fragments exist of others extending back to 1561. Some of the early entries refer to matters which still require looking after. For instance, in 1561 ‘the consall ordanis’ that ‘tavernares sall all stamp thair stowpiss;’ and that ‘nane wyne be sauld derrar nor xiiid. the pynt, under the paine of confiscing oft the pece;’ and in 1562 ‘the consall havand consideratioun that thair is certane puir barnis greting and crying nychtlie under stairs for falt of lugeing, hes grantit that olklike ane laid of colis be laid in to the almous hous for lugeing of the saidis puris during this winter tyme.’ In 1594 we find them, in view of the ‘baptisme of the Prince,’ making rules as to the price of wine—which, having been bought ‘upone verray hie prices,’ was to be sold at seven shillings a pint—and the rent of rooms, which was to be five shillings for ‘ane chalmier wyl provydit in all necessaris, honest in apparel, everie bed being within the chalmier,’ while the rent of ‘chalmers and bedding in simple sort’ was to be settled ‘at the discretion of the magistrat of the quarter.’ In the same year it was also found necessary to fix fines for absent and late members of council; while in 1597 watches were set at the bridge and port, to prevent all and sundry from entering therein unless they could give an account of themselves. In 1773 three members of the council—which was then elected under the old close system—having entered into an illegal combination to keep themselves and their friends in office for life, the matter was taken to the Court of Session, and by the casting-vote of the lord-president the election was declared ‘null and void,’ and the town was deprived of its corporate privileges. An appeal was taken to the House of Lords, when Boswell was one of the counsel, some of his arguments being furnished by Dr Johnson; but the decision was confirmed, and till 1781 there was no corporation. In that year the king granted the petition of the inhabitants, praying him to restore the burghal privileges; but the set was altered, and the franchise vested in the burgesses all together; and this continued to be the case till the passing of the Municipal Reform Act of 1883. Since that time the Police Act has also been adopted. The boundaries of the royal burgh were extended in 1888. The modern town council consists of a provost, 4 bailies, a treasurer, a dean of guild, and 13 councillors—the town being, for municipal purposes, divided into five wards. The magistrates acquired, in 1601, the hereditary sheriffship of the burgh, and the provost is also styled high-sheriff, and the bailies sheriffs. They have inside the burgh concurrent jurisdiction with the sheriff. The corporation revenue was, in 1832, £2295, in 1893 £2461. The town council acts also as the police commission, and maintains a police force of 15 men (1 to each 1183 of the population), under a superintendent with a yearly salary of £175. Water was introduced from Gillies Hill in 1774, and the present supply comes from the Touch Hills. Additional filter beds and pipes were constructed and laid in 1894 at an expense of over £12,000. The works are managed by a body of water commissioners elected partly by the town council and partly by ratepayers. Gas is supplied by a joint-stock company, with works near the station. Besides the guildry there are seven trades incorporated by royal charter, viz., hammermen, weavers, shoemakers, tailors, butchers, skimmers, and bakers, and four incorporated by seal of cause from the magistrates—mechanics, barbers, carters, and maltmen. The town has a head post office, with money order, savings bank, and telegraph departments (rebuilt in 1894 at an expense of over £5000), branch offices of the Bank of Scotland, British Linen Company, Clydesdale, Commercial, National, Royal, and Union Banks, and a National Security Savings Bank, and a fever hospital. There are a number of excellent hotels. A religious newspaper called the *British Messenger* is published monthly, and the



Seal of Stirling.

Brutti Scoti stant hic cruce triti.

On the matrix is a castle with trees, and round about is

newspapers are the Conservative *Stirling Journal* (1820), published on Friday; the Liberal *Stirling Observer* (1836), published on Wednesday; the Liberal *Stirling Saturday Observer* (1873); and the independent *Stirling Sentinel* (1888), published on Tuesday. Among the miscellaneous institutions may be noticed a Natural History and Archaeological Society (formerly the Field Club), an Astronomical Society, an Agricultural Society, a Horticultural Society, a Choral Society, cricket, football, curling, golf, bowling, and angling clubs, a Religious Tract Society, a Young Men's Christian Association, with an Institute comprising hall, reading-room, gymnasium, etc., in Allan Park, and the usual religious and philanthropic associations. There is a weekly market every Friday, and fairs are held on the first and third Fridays of February, March, and April, and the first and last Friday of May; and there is a hiring fair on the third Friday of October. There is a resident sheriff-substitute, and ordinary courts are held every Tuesday and Thursday during session, and small debt courts every Thursday. A justice of peace small debt court is held on the first Monday of every month, and for other business as may be required. Quarter sessions are held on the first Tuesday of March, May, and August, and on the last Tuesday of October. Stirling unites with Inverkeithing, Dunfermline, Queensferry, and Culross in returning a member to serve in parliament, and is the returning burgh. Parliamentary constituency (1893) 2414; municipal, 3050, including 636 females. Valuation (1875) £54,119, (1885) £73,833, (1894) £80,524, exclusive of railways and tramways. Pop. of royal burgh (1841) 8307, (1861) 10,271, (1871) 10,873, (1881) 12,194, (1891) 16,974. Pop. of parliamentary and police burgh (1861) 13,707, (1871) 14,279, (1881) 16,012, (1891) 16,776, of whom 7819 were males and 8957 females. Of these 13,944 were in Stirling parish and 2832 in St Ninians. Houses (1891) inhabited 3556, uninhabited 217, and being built 11.

See also Sir Robert Sibbald's *History and Description of Stirlingshire* (1710; new ed., 1892); Nimmo's *History of Stirlingshire* (1st ed., Edinb. 1777; 2d, Stirling, 1817; 3d, Edinb. 1880); Sutherland's *General History of Stirling* (Stirling, 1794); Chalmers' *Caledonia* (1807-24); Mrs Graham's *Lacunar Strevelense* (1817); R. Chambers' *Picture of Stirling* (Edinb. 1830); *History of the Chapel Royal of Stirling* (Grampian Club, Edinb. 1882); a number of papers in the *Proceedings of the Natural History and Archaeological Society; Local Notes and Queries reprinted from the Stirling Observer* (Stirling, 1883); *Charters and other Documents relating to the Royal Burgh of Stirling* (Glasg. 1884); *Extracts from Records of Burgh of Stirling, 1519-1666* (Glasg. 1887); *Extracts from Records of Burgh of Stirling, 1667-1752* (Glasg. 1889); *Cook's History of Stirling Castle* (Stirling, 1890).

Stirling and Dunfermline Railway. See NORTH BRITISH RAILWAY.

Stirlingshire, one of the midland counties of Scotland, is partly Lowland and partly Highland. The Boundary Commissioners in 1891 effected a rearrangement of the boundaries between Stirlingshire and the adjoining counties of Clackmannan, Perth, and Dumbarton. Stirling parish, which was situated partly in Stirlingshire and partly in Clackmannanshire, was placed wholly in the former county; Alva parish, which formed a detached part of the county of Stirling, was transferred wholly to the county of Clackmannan; Alloa parish, previous to being restricted to Clackmannanshire, gave its Perthshire portion (situated at Gogar Haugh) to Stirlingshire, to the parish of Logie; while the parish of Logie, previously partly in Stirlingshire and partly in the counties of Clackmannan and Perth, was placed wholly in Stirlingshire. Of the other parishes partly in Stirlingshire and partly in Perthshire, Kippen was placed wholly in the former, and Leacroft (after giving part of its Stirlingshire portion to the parish of Logie) wholly in the latter. New or East Kilpatrick, which was situated partly in Stirlingshire and partly in Dumbartonshire, was placed wholly

in the latter county. For additional information regarding these alterations, and for changes on the boundaries of the interior parishes, see under the various headings. Stirlingshire is bounded N by the county of Perth, NE by the counties of Clackmannan and Fife, E by the Firth of Forth and Linlithgowshire, SE by Linlithgowshire, S by Lanarkshire and the Kirkintilloch detached portion of Dumbartonshire, and SW and W by Dumbartonshire. Its shape is irregular, but the greater part of it may be said to be compact, and measures 27½ miles, from Grangemouth on the E to the junction of Catter Burn with Endrick Water on the W, and averages 13 miles from N to S at right angles to this; and from this compact portion a long projection passes up the NE side of Loch Lomond for 20 miles, 6½ miles wide at starting, and tapering to the head of Glen Gyle. The extreme length of the county, from the head of Glen Gyle south-eastward to LINLITHGOW BRIDGE, is 45½ miles; and the extreme breadth, from the boundary line NE of Caudhame south-westward to the junction of the Allander and Kelvin is 24 miles. The boundaries are largely natural. Beginning at the NW corner, the boundary line follows the stream in Glen Gyle down the glen to Loch Katrine (364 feet), and then passes along the loch itself to Coalbarns, SE of Stronachlachar, whence it strikes straight west-south-westward to Loch Arklet (463). From near the NE end of this loch it passes south-south-eastward to the top of Beinn Uaimhe, and thence south-eastward by the summits of Beinn Dubh (1675 feet) and Mulan an t' Sagairt (1398) to Duchray Water at the entrance to Glenn Dubh, 1½ mile W of the W end of Loch Ard. From this the boundary is Duchray Water, to a point ¾ mile below Duchray Castle, and thereafter the line winds south-eastward till it reaches a tributary of Kelty Water, ¼ mile WSW of GARTMORE. It follows this stream to the Kelty, then the Kelty to the Forth, and thereafter the last river to the junction of the Allan Water with the Forth. Here it passes northward up the Allan, along a tributary flowing from the NE, then turning southward in a more or less irregular course reaches the Forth, whence it follows the main channel of the river and the firth all the way to the mouth of the river Avon. The latter river separates the county from Linlithgowshire for 13½ miles, upwards to the junction of the Drumtassie Burn, which then forms the boundary to its source, and after this the line passes westward to North Calder Water, which it follows for 1 mile up to Black Loch. Crossing this loch, it curves north-westward to the river Avon, ¼ mile below the great bend near Fannyside Loch, and follows this river up to Jawcraig, whence it passes westward to the Castlecary Burn, and follows this downwards to Bonny Water. Thereafter it keeps near the Forth and Clyde Canal on the N side, along a small stream that forms the head source of the Kelvin, and then follows the Kelvin for 12½ miles to the junction of the Allander Water with the Kelvin. Leaving the Allander near Dugaldston Loch it follows the Baldernock and Strathblane boundaries till it again reaches the Allander a little SW of Mugdock Castle, up which and the Auldmuirch Burn it passes to Auchingree Reservoir. From the reservoir it runs north-westward, partly by Carnock Burn, to Catter Burn, follows this downward to Endrick Water, and then the course of the latter to LOCH LOMOND, where, curving outwards to include the islands of Torrinch, Clairinch, Inchealloch, Inchfad, Inchruim, and Bueinch, it passes between Inchlonsaig (Dumbartonshire) and Strathcashell Point, and then up the centre of the loch till opposite Island Vow, 2 miles from the N end of the loch, where it turns eastward to the summit of Beinn a' Choin (2524 feet), and thence by Stob nan Eigrach (2011) to the stream in Glen Gyle. In 1894, 118,457 acres in the county were under crop, bare fallow, and grass, and 14,450 under wood—an increase in the former case of 27,057 acres within the last forty years, and in the latter case of 1467 in the same period. The mean summer and winter temperatures differ but little from what (58° and 37°) may be taken as those for the central Scottish counties;

and the mean average annual rainfall varies greatly, being only about 35 inches for the district about Stirling, while at the lower end of Loch Lomond it is 55, and farther up the loch rises to over 90. Among the counties of Scotland, Stirling is twentieth as regards area; ninth as regards population, both absolutely and in respect of the number of persons (264) to the square mile; and twelfth as regards valuation.

Surface, etc.—The eastern part of the county is finely wooded, well cultivated, and undulating, but no portion of it reaches 500 feet above sea-level, and this flat tract is prolonged up the valleys of the Forth and Kelty, sweeps from the neighbourhood of FLANDERS Moss southwards by BUCKLYVIE and BALFRON, and thence down the valley of Endrick Water to the SE end of Loch Lomond. In the centre of the compact portion of the county the ground slopes upward from the valley of the Forth at Gargunnoch and Kippen to the Gargunnoch Hills (highest point 1591 feet), and thence southward in an undulating grassy and heathy plateau from 1000 to 1400 feet high, and terminating along the S edge in the Kilsyth Hills (highest point, Laird's Hill, 1393) overlooking the valley of the Kelvin at Kilsyth. From the NW portion of the Kilsyth Hills the long green line of the Campsie Fells stretches away westward to the flat ground at the SE end of Loch Lomond, their general height being from 1500 to 1800 feet, and the highest summit, Earl's Seat, 1894 feet. These throw out on the SW the lower spurs known as the Strathblane Hills, and from this the ground undulates downwards by Milngavie to the valleys of the Kelvin and the CLYDE. Northward the Campsie Fells slope down to the valley of Endrick Water, on the opposite side of which, at Fintry, are the Fintry Hills (highest point, 1676 feet), NW of which, beyond the hollow of the head-stream of the Endrick—here making a sharp bend—are the Gargunnoch Hills. The long projection already referred to as branching off to the NW along Loch Lomond is purely Highland in its character, and contains the whole of the summits, from Beinn a' Choin south-eastward, which have been already described in the article on Loch Lomond. The highest summit is Ben Lomond (8192 feet), and the ridges slope rapidly down in the SW to Loch Lomond, and on the NE towards Loch Katrine, Lochs Chon and Ard, and the upper waters of the Forth. The portion of the county north of the Forth belongs rather to the OCHIL HILLS.

Nearly half of Loch Lomond is in Stirlingshire, but otherwise the lakes of the county are few and small. The southern shore of Loch Katrine (364 feet) for 2 miles at the western end lies along the boundary, and wholly in the county are Loch Arklet ($1 \times \frac{1}{2}$ mile; 463 feet); Walton Reservoir ($\frac{1}{2} \times \frac{1}{4}$ mile), at the base of the Fintry Hills on the S; Loch Coulter (5×3 furl.), 3 miles NW of Dunipace; reservoirs near Carron Iron-works, about Kilsyth, and south of Strathblane, one of this last group being the settling reservoir at Craigmaddie for the GLASGOW water-works; and in the SE of the county Loch Ellrig ($\frac{3}{8} \times$ barely $\frac{1}{4}$ mile), Little Black Loch, and part of Black Loch. The whole of the northern side of the county is drained by DUCHRAY WATER, the Kelty, and the FORTH, with the innumerable smaller streams flowing to them; the eastern portion by the Bannock Burn, the Pow Burn, the Carron and Bonny Water, and the Avon, with the smaller streams flowing to them; the centre is drained by the upper waters of the Carron and Endrick Water; in the S and SW are the Kelvin, with Garrel Burn, Glazert Water, and Allander Water; the centre of the W side has Endrick Water and the streams flowing to it; while Loch Lomond receives a large number of small burns from the mountains along the NE side. Loch Arklet contains capital trout, red-fleshed, and almost as good as those of Loch Leven, but it is preserved. The fishing in the larger streams is good, but in the smaller it is worthless.

Geology.—Apart from the economic value of the mineral fields along the margin of the county from Strathblane to Stirling, there are several features of

special interest connected with the geology of Stirlingshire. Prominent among these must be ranked the remarkable volcanic chain of the Campsie Fells, where the successive lava flows can be traced, piled on each other like horizontal lines of masonry. The geological formations represented within the county are given in the following table:—

Recent.	Peat and alluvium. Raised Beaches.	{ 25-Foot Beach. 50-Foot Beach.
Pleistocene.	100-Foot Raised Beach. Moraine, Sand, and Gravel. Boulder-clay.	
Carboniferous.	Coal-Measures. Millstone Grit.	{ Red Sandstone group. Coal-bearing group.
	Carboniferous Limestone.	{ Upper Limestone group. Middle Coal-bearing group. Lower Limestone group.
	Calcareous Sandstone.	{ Upper or Cement-stone group, which in Stirlingshire is for the most part replaced by contemporaneous volcanic rocks.
	Old Red Sandstone.	{ Upper Old Red Sandstone. Lower Old Red Sandstone.
		{ Red sandstone, marl, and conglomerate. Conglomerates, sandstones, and shales.
	Metamorphic rocks of the Highlands.	

A line drawn from the shore of Loch Lomond near Balmaha NE to a point near Aberfoyle marks the position of the great fault, bringing the Old Red Sandstone into conjunction with the altered rocks of the Highlands. That portion of the county situated to the NW of the fault is wholly occupied by these strata, being repeated by various folds mostly inverted. An important discovery has recently been made suggesting the probability that Lower Silurian rocks occur along the Highland border to the north of the great fault. From the annual report of the Geological Survey for 1893 it appears that a zone of cherts, resembling the radiolarian cherts of Arenig age in the south of Scotland, associated with black shales, mudstones, and greywackes, can be traced from the pass of Leny by Aberfoyle to Loch Lomond. The foregoing beds are succeeded northwards by massive greywackes, sometimes pebbly, with bands of purple slate. These in turn are followed by a thick series of blue and purple slates, well developed at Aberfoyle by flags, slates, and massive pebbly grits which seem to pass northwards into the mica schists of the Central Highlands. A careful search has been made in the black shales associated with the cherts for graptolites in order to prove their geological horizon. Hitherto the search has not been successful, but from the unaltered character of the bands it is probable that fossils may be found at no distant date.

The representatives of the Lower Old Red Sandstone cover a belt of ground stretching from the great fault already indicated SE to Kippen and Killearn. The beds occupying the lowest geological horizon are exposed along the margin of the fault in the drum of Clashmore, about 3 miles SW of Aberfoyle, where a vertical band of porphyrite is seen in contact with the fault. This bed of lava evidently represents a portion of the great volcanic series of the Ochils. For upwards of 1 mile from the fault the conglomerates and red sandstones overlying this band of porphyrite are highly inclined or nearly vertical, the general inclination being towards the SSE. As the observer advances farther S, the angle of inclination gradually diminishes, and the beds are repeated by occasional minor undulations till he reaches a point about 3 miles from the fault which forms the centre of a great synclinal fold. The axis of this basin coincides with a line drawn from Flanders Moss to a point near Drymen. On the SE side of this synclinal axis the general dip of the beds is towards the NW, and hence the observer crosses anew the same series of beds in regular order. It is observable, however, that the strata along the Highland border are always much more conglomeratic than those occupying the same geological horizon situated several miles to the S. The con-

glomerate bands close to the great fault are composed chiefly of porphyrite pebbles, but as we ascend in the geological succession the porphyrite pebbles disappear, and the blocks consist wholly of various metamorphic rocks of the Highlands. The strata occupying the centre of the syncline, which are the highest members of this formation in the county, are composed of grey sandstones which yielded to Mr R. L. Jack numerous plant remains, regarded by Mr Kidston as specimens of *Arthrostroma* (Dawson). These grey sandstones underlie the great conglomerates of Uamh Var in Perthshire, which are hardly, if at all, represented in this county.

Resting on the denuded edges of the Lower Old Red Sandstone strata comes a succession of red sandstones and conglomeratic marls, which pass conformably upwards into the Carboniferous system. These beds have recently yielded fragments of *Holoptychius nobilissimus*, a typical fish of the Upper Old Red Sandstone, and they must therefore be grouped with the latter formation. Along the line of junction the Lower Old Red strata are inclined to the NW, while the members of the overlying group are inclined to the SE. It is evident, therefore, that in this area there is additional proof of the extensive denudation which intervened between the Lower Old Red Sandstone and the deposition of the red sandstone series at the base of the Carboniferous system. The unconformable junction between the two formations is not traceable, however, across the county, for between Kippen and Balfour they are brought into contact with each other by a fault trending ENE and WSW. This fault is a continuation of the great dislocation throwing down the Clackmannan coalfield against the Old Red volcanic rocks of the Ochils. Near the top of the group there is a concretionary cornstone which has been worked for lime at intervals between Balfour and Gargunnock. The red sandstones just described are succeeded by blue, grey, green, and red clays, with numerous thin bands and nodules of impure cement-stone, and occasional beds of sandstone, forming the base of the Cement-stone group. They skirt the N escarpment of the Campsie Fells, and are likewise seen in some of the glens on the S side of the range near Clackan of Campsie and on the hills above Kilsyth. One of the finest sections of these beds occurs in the Ballagan Burn near Strathblane. Along the base of the escarpment on the N and W sides of the range they are overlaid by white sandstones, which at intervals are associated with fine volcanic tuffs. These tuffs are specially observable to the E of Fintry, and also to the N of Kilsyth, where they alternate with sheets of porphyrite. To these succeed a grand development of contemporaneous volcanic rocks consisting almost wholly of sheets of diabase porphyrite, with few or no intercalations of tuffs. Occupying the same horizon as the volcanic rocks of the Kilpatrick and Renfrewshire hills (see the section on geology in our article on RENFREWSHIRE), they reach a thickness in the present area of nearly 1000 feet. The successive lava flows are admirably displayed on the S side of the chain, forming a series of parallel beds recognisable even from a distance. Skirting the escarpment on the S side, a great fault is traceable from Strathblane E to near the Carron Water, which brings the overlying Carboniferous Limestone series into conjunction with the cement-stones and the porphyrites at the base of the volcanic series. At the E end of the range, however, from a point W of Stirling S towards the Carron Water, the upper limit of the volcanic rocks is well defined. In that direction the lavas are gradually thinning out, but eventually they pass underneath blue shales with cement-stone bands, forming the top of the Cement-stone group. It is apparent, therefore, that in Stirlingshire this group is mainly represented by volcanic rocks. It is interesting to observe, however, that not far to the E of Bridge of Allan, at Causewayhead, this volcanic series is not represented at all; and where the horizon emerges in the Cleish Hills from beneath the Clackmannan Coalfield it is represented merely by some bands of tuff. The roots of some of the old volcanoes

which discharged the lavas of the Campsie Hills are still to be found in different parts of the county, especially on both sides of the Blane Valley W of Strathblane. Dungoyne Hill is perhaps one of the best examples in that region. They also occur on both sides of the Endrick at Fintry, where they pierce the sedimentary beds underlying the volcanic series and the porphyrites and tuffs at the base. Meikle Bin, the highest peak in the Campsie range, marks the site of another of these ancient volcanoes.

As indicated in the table of geological formations the triple classification of the Carboniferous Limestone series obtains in this county. Beginning at the W limit of this important division we find the limestones of the lower group lying at low angles against the volcanic rocks. From the researches of the Geological Survey it would appear that on descending the hill slope the observer crosses the Hosie Limestone and the Hurlet Limestone with the underlying coal, until, in the bed of the valley, he finds the white sandstone underlying the limestones. On the South Hill of Campsie the same beds reappear, and the Hurlet limestone and coal can be traced more or less continuously round the slope. Passing E to the neighbourhood of Kilsyth, there is a great development of the middle coal-bearing group, forming indeed one of the most valuable mineral fields in Scotland on account of the various seams of coal and ironstone. From Cairnbog E by Kilsyth to Banton the beds are thrown into a series of small arches and troughs, the most conspicuous being the anticlinal fold at Kilsyth, locally known as 'The Riggins.' Again, in the tract between Denny and Stirling, the various subdivisions of the Carboniferous Limestone series dip towards the E, and there is a general ascending series from the Hosie Limestone through the coals and ironstones of the middle group to the Index, Calmy, and Castlerea Limestones of the upper group.

Along the E margin of the county the strata just described are followed by the Millstone Grit, consisting of alternations of thick sandstones and fireclays, with irregular seams of coal and clayband ironstone. To these succeed the true Coal-measures, which are well developed between Stenhousemuir and Grangemouth, and again at Falkirk. At the former locality the prominent seams are the Coxroad, the Splint, and the Craw Coals, the highest being the Virtnewell seam. Between Dennyloanhead and Coneypark there is a small outlier of Coal-measures thrown down by two parallel faults running E and W. On the N side the outlier is brought into contact with the Carboniferous Limestone, and on the S side against the Millstone Grit and the Carboniferous Limestone.

There are numerous intrusive sheets of basalt rock associated with the Carboniferous strata, of which, perhaps, the most conspicuous extends from Abbey Craig through Stirling to Denny, where its outcrop is shifted farther W by a fault. It is perhaps connected with the sheet so often repeated in the neighbourhood of Kilsyth, though here it occupies a higher horizon among the coal-bearing series of the Carboniferous Limestone, while at Denny the sheet is intruded in the lower limestones. A glance at the Geological Survey maps will show the number of Tertiary basalt dykes traversing the county.

During the glacial period the direction of the ice flow between Loch Lomond and Loch Katrine was nearly N and S. On reaching the plain between Drymen and Stirling, the movement was gradually deflected towards the SE, and eventually as the ice crossed the range of the Campsie Hills, the direction became nearly E, parallel with the escarpment on the S side of the range. There is an extensive deposit of boulder clay throughout the county, which varies in character with the underlying strata. An interesting feature connected with it is the occurrence of shells at certain localities in the Endrick Valley. Near Drymen station, a section was exposed showing on the surface about 12 feet of boulder clay resting on 7 feet of laminated blue clay, which yielded marine shells and the antler of a

reindeer. Mr R. L. Jack believes that the shell fragments found in the boulder clay in the basin of the Endrick have been derived from the denudation of such marine deposits. The later glaciers must have attained great dimensions in the higher portions of the county, judging from the great moraines which are seen along the valleys.

In this county there are deposits, evidently belonging to the 100-feet beach, consisting of sands, gravels, and clays, which cross the watershed of the midland valley, and are to be found at Kilsyth. At a lower level there is another ancient beach, the upper limit of which is marked by the 50-feet contour line, composed of laminated clay, mud, silt, and sand. It now forms the well-known Carse of Stirling. These deposits are abundantly charged with recent sea shells, and they have also yielded the remains of whales, canoes, and implements.

Economic Minerals.—The geological horizon of the valuable seams of coal and ironstone has already been indicated. In the Kilsyth district there are four seams of black-band ironstone wrought, comprising the Possil and Banton seams. There are also several beds of coal, of which the Banton Main is much in demand. The well-known Hurler Limestone has been extensively wrought in the Campsie district and the seam of alum-shale underlying this limestone. The upper limestone group yields a large supply of lime, one of the bands, viz., the Calmy or Arden, being formerly much wrought. Two valuable seams of coal, known as the Hirst coals, are associated with this band, being found only a few fathoms below the limestone. The seams are in high repute, owing to their caking properties, being nearly equal to Newcastle coal. Again, in the true Coal-measures in the neighbourhood of Grangemouth and Carron, the chief coals sought after are the Splint and Coxroad seams, while in Falkirk they are also in much request. Excellent building stone is obtained from the different subdivisions of the Carboniferous formation. Sandstones belonging to the Carboniferous Limestone series are wrought at Kilsyth, Castlecary, and a number of other localities, while the sheets of intrusive basalt are largely in demand for paving stones. The red sandstones between Killearn and Kippen are also in considerable demand locally for building purposes.

Soils and Agriculture.—The soils may be divided into carse, dry-field, hill pasture, moor, and moss. The first, which includes some of the finest land in Scotland, extends for 26 miles along the Forth, from the Avon upwards to beyond Kippen, with a breadth of from $\frac{1}{2}$ to $\frac{3}{4}$ miles, and covering an area of about 36,000 acres. It is flat or slopes gently from the S and SW towards the river, the height above sea-level varying generally from 12 to 40 feet, but some of it lies lower, having been reclaimed from the sea in the end of the 18th, and the beginning of the 19th century. Originally a bluish argillaceous earth, damp and marshy, it has been brought into its present condition of a fertile friable loam by the thorough application of deep draining and subsoil ploughing first introduced by Mr Smith of Deanston. 'It is perfectly wonderful,' says a writer in the *Quarterly Journal of Agriculture* for 1839, 'to behold the mighty change this thorough drain system is making in the different parts of the county where it is in operation. Wet land is made dry; poor weeping clays are converted into turnip soil; and even what would formerly have been accounted dry is advanced in quality. Whole parishes in the vicinity of Stirling are completely transformed from unsightly marshes into beautiful and rich wheat fields; and where the plough could scarcely be driven for slush and water we see heavy crops per acre and heavy weight per bushel, the quantity and the quality alike improved.' The drainage would now, in several places, again need to be looked to. The depth of this soil is often over 30 feet. It is everywhere free from stones and pebbles, and the place and period of its formation are indicated by the beds of recent shells which it contains at various depths. The dry-field be-

gins at the higher margin of the carse, comprehends the arable slopes on the lower part of the hills, and occupies all the straths, valleys, and low grounds not included in the carse district. This soil varies very much in quality and in character, but though it is sometimes very inferior, it is much oftener a highly fertile loam or gravel, particularly suitable for the cultivation of potatoes and turnips. Dry-field soil prevails in the parishes of Polmont, Larbert, Denny, St Ninians, Kilsyth, and Baldernock, and in portions of Muiravonside and Slamannan, as well as all the parishes in the hilly central division of the county—Strathblane, Campsie, Killearn, Balfroun, Gargunnock, and Kippen. In the district between Linlithgow and Stirling it is so good and fertile as to be almost equal to carse land, and the portion of it sloping down towards the valleys of the Forth and Endrick are also good. The moorland was, in the latter half of the 18th century, very extensive, comprehending about one-fourth of the whole county, but it has now been almost all improved into dry-field, only a small portion being left in the Highland district, chiefly in the parish of Buchanan. The hill-pasture occupying the rest of the Highland district, and all the rising-grounds already mentioned in the centre and W of the shire, have a sandy or peaty soil covered with heath and short grass. It embraces nearly half of the whole county, and includes some of the best grazing ground in the whole of Scotland. In the early part of the 19th century moss occupied about one-thirtieth of the whole area, but this proportion has since that time been much reduced by reclamation, principally in Slamannan and in the carse district. In the latter case it is worth removing, as it overlies land of excellent quality, but in the W of Slamannan parish, where a considerable district is still covered with a mass of it from 3 to 12 feet deep, the sandy soil beneath is valueless. The increase in the amount of arable land within the last forty years has been already stated. In the percentage of cultivated area Stirlingshire comes seventeenth among the Scottish counties, the proportion being 39·6, while that for all Scotland is 25·1. The areas under various crops at different dates are shown in the following tables:—

GRAIN CROPS.—ACRES.

Year.	Wheat.	Barley or Bere.	Oats.	Total.
1854	4985	6773	22,379	34,138
1870	3818	4995	19,480	28,293
1877	2863	4956	19,244	27,063
1884	2766	4174	19,330	26,270
1894	1819	3765	18,955	24,539

GRASS, ROOT CROPS, ETC.—ACRES.

Year.	Hay, Grass, and Permanent Pasture.	Turnips.	Potatoes.
1854	39,656	5964	3607
1870	...	4885	4941
1877	69,370	4898	4265
1884	74,520	4432	3607
1894	80,957	4521	3253

There are about 450 acres annually under rye, pease, vetches, etc., 3000 acres under beans, and 1400 acres fallow. There is the same falling off in the area under wheat as in the other Scottish wheat-growing counties. The seeming falling off in the area under the plough since 1854 has been remarked on in previous county articles. The wheat and beans are grown on the carse land, and the average yield of the former is 32 bushels per acre; of barley, 38 bushels; of oats, 35 bushels; of turnips, 16 to 24 tons; of potatoes, 4 to 8 tons. In the S and W of the county, along the railways, and about the towns many of the farms are used for dairy purposes. Rents vary from 12s. 6d. to £3 per acre; and sheep-grazing is 2s. 6d. to 6s. a head, except on the Ochils, where it is from 8s. to 10s.

STIRLINGSHIRE

The agricultural live-stock in the county at different dates is shown in the following table:—

Year.	Cattle.	Horses.	Sheep.	Pigs.	Total.
1854	29,112	5279	85,513	2488	122,392
1868	25,847	...	116,277	1791	...
1877	29,028	4765	108,862	2205	144,860
1884	31,228	4572	114,292	2246	152,338
1894	32,108	5181	127,531	2520	167,435

For dairy purposes Ayrshire cows are generally kept, and at several farms there are excellent pure bred herds. Cattle kept for feeding are generally crosses, though some also are shorthorns. A few of the leading proprietors keep small herds of shorthorns. The horses are chiefly Clydesdales, and some of the farmers are well-known breeders. The best sheep are blackfaced, but there are also Leicesters and crosses. Of some 1500 holdings in the county, more than 1000 were under 100 acres. In 1891, 923 farmers employed 1144 men, 553 boys, 463 women, and 217 girls.

Anciently a large portion of the county seems to have been covered with wood, and most of the mosses in the carse and dry-field seem to have originated in the decay of these forests. Where no mosses are now found—e.g., between Stirling and Polmont—there must also have been large tracts of woodland, at Torwood Forest and elsewhere. About 1735 extensive plantations were formed on the estates of the Duke of Montrose, Sir Charles Edmonstone, and Lieutenant-General Fletcher Campbell; and by 1854 the area under wood was 13,045 acres. It was, in 1891, 14,450. Of the old orchards planted and tended by the monks in the E of the county none now remain, but 73 acres were in 1893 used as orchards and 115 as market gardens. Many of the smaller proprietors and feuars obtained possession of their lots in consequence of former Dukes of Montrose, and Earls of Mar, Menteth, and Glencairn, having made grants to some of their retainers and their heirs for ever at very small rents. The Earl of Wigtown, who had large estates in the neighbourhood of Denny, was so convinced that the Union in 1707 would ruin the country that he sold all the property to his tenants on condition that they would continue to pay as feu-duty their rental at the time. The principal mansions, most of which are separately noticed, are Airth Castle, Airthrey Castle, Arngomery, Antermoy House, Aucheneck House, Auchinbowie House, Auchinreoch House, Auchmedden Lodge, Avondale House, Balfanning House, Ballagan House, Ballikinrain House, Ballindalloch, Balquhatston House, Banknock House, Bannockburn House, Bantaskine House, Bardowie House, Blairquhastle, Boquhan, Buchanan Castle, Callendar House, Candie House, Carbeth House, Carbrook House, Carnock House, Carron Hall, Colzium House, Craigbarnet House, Craigend Castle, Craigforth House, Craigmaddie House, Craigton, Culreuch, Denovan, Dougalston House, Duchray Castle, Dunpace House, Dunmore Park, Duntreath House, Garden, Gargunnoch House, Gavell House, Glenberrie, Glenfuir House, Glenorchard House, Glorat House, Hayston House, Herbertshire House, Inversnaid Lodge, Kerse House, Killearn House, Kincaid House, Kinnaird House, Kirkton House, Larbert House, Laurence Park, Laurehill, Leckie House, Leddriegreen House, Lennox Castle, Livlands, Manuel House, Meiklewood House, Merchiston Hall, Millfield House, Muiravonsdale House, Neuck, Parkhill House, Plean House, Polmaise, Polmont House, Polmont Park, Quarter House, Rowardennan Lodge, Sauchie House, Seton Lodge, Stenhouse, Thornhill House, Touch House, West Quarter House, and Westertown House.

Industries.—The manufactures of the county are numerous and important, comprising, besides those connected with its minerals, the weaving of carpets, tartans, tweeds, winecoys, and other woollen fabrics at Alva, Bannockburn, Cambusbarron, and Stirling; and of cotton at Balfon. There are printworks and bleachfields at Denny, as well as at Kincaid and Lennoxton, and several other localities in the parish of Campsie.

STIRLINGSHIRE

There are large chemical works at Campsie, Denny, and Falkirk, paperworks at Denny, a pottery at Dunmore, and distilleries at Glenguin, Glenfoyle, Gargunnoch, Cambus, Bankier, Bonnymuir, Rosebank, and Camelon. The great iron industries are noticed under CARRON IRONWORKS, FALKIRK, and elsewhere, and details will be found for the other industries in the separate articles dealing with the places or under the different parishes. The position and structure of the Stirlingshire coalfield have been already indicated in the section on the geology, and it here remains but to notice its economic aspects. The total amount of coal raised from the whole of the Scottish coalfields in 1892 was 27,191,923 tons, valued at the pit mouth at £7,794,613; and of this the Stirlingshire collieries produced 1,745,226 tons, valued at £552,524 at the pit mouth. In East Stirlingshire 52,352 tons of fireclay were raised, out of a total of 563,739 tons for all Scotland, the value being £9162. Sandstone is quarried at Dunmore, Polmaise, and Plean, and limestone at several places about Campsie.

Communications, etc.—The commerce is principally centred at GRANGEMOUTH, but the county is very well provided with roads and railways. Of the former the three main lines may be said to be that from Edinburgh to Glasgow by Falkirk, Kilsyth, and Kirkintilloch; that from Edinburgh to the north by Falkirk, Larbert, and Stirling; or the parallel route, Falkirk, Denny, and Stirling; and that from Stirling up the valley of the Forth, and by Bucklyvie, Balfon, and Killearn, or Bucklyvie, Drymen, and Killearn, to Glasgow. An important branch connects the first and third of these across the centre of the county by Kippen, Fintry, and Campsie, to Kirkintilloch. There are also a large number of excellent cross and district roads. The eastern part of the county is traversed by the main line of the North British system between Edinburgh and Glasgow and between Edinburgh and Larbert; and the main line of the Caledonian between Glasgow and Stirling; and also that from Glasgow by Airdrie to Slamannan, Manucl, and Bo'ness. From Lenzie Junction the Blane Valley railway goes by Strathblane to Gartness. From Stirling the Forth and Clyde section of the North British system passes up the valley of the Forth, and on by Bucklyvie to BALLOCH and the Clyde, uniting with the Blane Valley railway at Gartness. At Bucklyvie a branch strikes off NW to Aberfoyle. The Kelvin Valley railway leaves the North British line at Maryhill, proceeding by way of Kilsyth and Bonnybridge to Larbert Junction. From Stirling the Caledonian railway runs to Bridge of Allan previous to branching off for Perth and the north and for Callander and Oban. About 2 miles north of Larbert the direct Alloa line branches off for that place *via* the Forth bridge at Alloa, but before reaching the bridge sends off a branch to South Alloa. The Loch Katrine aqueduct in connection with the Glasgow water-supply traverses the western portion of the county in a south-easterly direction from Duchray Water to the immense reservoirs at Craigmaddie and Mugdock. From near Larbert a branch of the Caledonian system leads to Grangemouth, and there are also a branch line from Larbert to Denny, and several other branches in the SE. The Forth and Clyde Canal also passes through the county from Castlecary to Grangemouth.

The only royal burgh is Stirling. Falkirk is a parliamentary burgh and burgh of regality. Kilsyth is a police burgh and burgh of barony; and Bridge of Allan, Denny and Dunpace, and Grangemouth are police burghs. Places with upwards of 5000 inhabitants are Falkirk, Grangemouth, Kilsyth, and Stirling; towns with between 5000 and 2000 inhabitants are Bannockburn, Binniehill and Southfield, Bonnybridge, Bridge of Allan, Denny, Lennoxton, and Stenhousemuir; places with populations of between 2000 and 1000 are Cambusbarron, Carron, Carronshore, Lauriston, Lime-rigg and Lochside, and Slamannan; places with populations of between 1000 and 500 are Balfon, Blackbraes, Blanehead, East Shieldhill, Hollandbush and Haggis, Larbert, Milton, Parkfoot and Longcroft, and Redding;

and smaller villages and hamlets are Airth, Auchinmully, Baldernock, Balmore, Banton, Barleyside, Birdstone, Buckleyvie, Burnbridge, Burn Row, Camelon, Campsie, Carronhall, Dunmore, Fintry, Gargunnoch, Glen, Goncchan, Killearn, Kinnaird, Longdyke, Maddiston and Sootyhill, Newton, East Plean, Finrie Lodge, Polmont, Raploch, Rumford and Craigs, Skinflatts, Torbrex, Torrance and Wester Balgrochan, Torwood, Wallace town and Standrig, and Whims of Milton. A portion of Linlithgow Bridge is also included.

The civil county contains the 23 *etres quoad civilia* parishes of Airth, Baldernock, Balfon, Bothkennar, Buchanan, Campsie, Denny, Dunipace, Drymen, Falkirk, Fintry, Gargunnoch, Killearn, Kilsyth, Kippen, Larbert, Logie, Muiravonside, Polmont, Slamannan, St Ninians, Stirling, and Strathblane. The *quoad sacra* parishes of Bannockburn, Banton, Bonnybridge, Bridge of Allan, Buckleyvie, Camelon, Grahamston, Grangemouth, Haggis, Marykirk (Stirling), Plean, Sauchie, and Shieldhall and Blackbraes, are also included; and there are chapelries at Buckieburn, Carronshore, Lauriston, Limerigg, and Milton of Campsie. Ecclesiastically 15 of those parishes are in the presbytery of Stirling, and 4 in the presbytery of Dunblane, both in the synod of Perth and Stirling; 8 are in the presbytery of Dumbarton, and 3 in the presbytery of Glasgow, in the synod of Glasgow and Ayr; and 8 are in the presbytery of Linlithgow in the synod of Lothian and Tweeddale. There are 44 places of worship in connection with the Established Church, 31 in connection with the Free Church, 23 in connection with the United Presbyterian Church, 2 in connection with the Congregational Church, 2 in connection with the Evangelical Union Church, 2 in connection with the Baptist Church, 4 in connection with the Wesleyan Methodist Church, 6 in connection with the Episcopal Church, and 10 in connection with the Roman Catholic Church. In the year ending September 1893 there were in the county 101 schools, of which 87 were public, with accommodation for 23,864 children. These had 22,365 on the rolls, and an average attendance of 18,190.

The county is governed by a lord-lieutenant, a vice-lieutenant, 23 deputy-lieutenants, and 167 justices of the peace. The sheriff-principal is shared with Dumbarton and Clackmannan; and there are two sheriff-substitutes, one at Stirling and one at Falkirk. The former has jurisdiction over the parishes of Baldernock, Balfon, Buchanan, Campsie, Denny, Drymen, Dunipace, Fintry, Gargunnoch, Killearn, Kippen, Kilsyth, Logie, St Ninians, Stirling, and Strathblane, and holds ordinary courts every Tuesday and Thursday, and small debt courts every Thursday; the latter has jurisdiction over the parishes of Airth, Bothkennar, Falkirk, Larbert, Muiravonside, Polmont, and Slamannan, and holds ordinary courts every Monday and Wednesday, and small debt courts every Wednesday. A small debt circuit court is held at Lennoxton on the second Wednesdays of February, May, August, and November. Justice of peace small debt courts are held at Stirling on the first Monday of every month, and quarter sessions are held on the first Tuesdays of March, May, and August, and the last Tuesday of October. The County Council is composed of 45 members—43 of these being for as many electoral divisions, and 2 for the burgh of Falkirk. The divisions are classed into districts, there being 9 in the Western District, 16 in the Central, and 18 in the Eastern. Besides the committees for these districts, the Council is divided into the following:—Standing Joint Committee (composed of county councillors, commissioners of supply, and the chief magistrates of the burghs of Grangemouth and Kilsyth), County Valuation Committees (for the Stirling and Falkirk Districts), Law and Parliamentary Committee, Executive Committee under Contagious Diseases (Animals) Act, Finance and General Purposes Committee, County Road Board, Public Health Committee, and the Committee under the Small Holdings Act of 1892. The police force, exclusive of the burgh of Stirling, consists of 69 men (1 to every 1575 of the population), under a chief constable with

a salary of £350 a year. In 1892 the average number of registered poor was 1466 with 930 dependants. Stirling, St Ninians, and Kilsyth form Stirling Poor-law Combination, Falkirk has a poorhouse for itself, Muiravonside belongs to Linlithgow Combination, and Kippen is in Dumbarton Combination. The proportion of illegitimate births averages about 5·8 per cent., and the average death-rate is about 17·3. Connected with the county is a battalion of rifle volunteers, and the 3d battalion of the Princess Louise's Argyll and Sutherland Highlanders, formerly the Highland Borderers Light Infantry Militia, both battalions having their headquarters at Stirling. The county returns one member to serve in parliament, and the parliamentary constituency in 1893-94 was 13,711. Another member is shared by Stirling burgh with Dunfermline, Inverkeithing, Culross, and Queensferry, and a third by Falkirk, with Linlithgow, Lanark, Hamilton, and Airdrie. Valuation (1674) £9024, (1815) £218,761, (1855) £269,640, (1876) £370,023, (1885) £428,569, 11s. 9d., (1894) £442,742, 3s. 8d., the last four being exclusive of railways, canals, and tramways. Pop. (1801) 50,825, (1811) 58,174, (1821) 65,376, (1831) 72,621, (1841) 82,057, (1851) 86,237, (1861) 91,926, (1871) 98,218, (1881) 112,443, (1891) 118,021, of whom 59,478 were males and 58,543 females. These were distributed into 24,410 families occupying 23,180 houses, with 73,060 rooms, an average of 1·61 persons to each room. Of the 118,021 inhabitants in 1891, 1831 men and 892 women were connected with the civil or military services or with professions, 501 men and 5086 women were domestic servants, 4889 men and 186 women were connected with commerce, 4016 men and 774 women were connected with agriculture and fishing, and 26,244 men and 5664 women were engaged in industrial handicrafts or were dealers in manufactured substances, while there were 12,666 boys and 13,287 girls of school age. Of those engaged in farming and fishing, 3823 men and 770 women were concerned with farming alone; and of those connected with industrial handicrafts, 13,191 men and 237 women were concerned with the working of mineral substances.

The county belonged anciently to the Caledonian Damnonii, and was afterwards partly included in the Roman province of Valentia, partly in that of Vespasiana. Still later it lay on the debatable land between the Angles, the Picts, and the Britons of Strathclyde; became the seat of a Scotic kingdom, thereafter part of Cumbria, and finally almost the central point of modern Scotland, and thus associated with many of the leading events in its history. Few counties can boast of being the scene of so many decisive battles as this—Stirling Bridge, 1297; Falkirk, 1298; Bannockburn, 1314; Sauchie, 1488; Kilsyth, 1645; and the second battle of Falkirk, 1746. The antiquities are both numerous and important, but for them reference may be made to the articles on the different parishes and towns and the others therein referred to. The Roman Wall, between the Firths of Forth and Clyde, which passed through portions of the county on the S, is separately noticed (see ANTONINUS' WALL), as is also ARTHUR'S OVEN.

See 'The Agriculture of Stirlingshire,' by James Tait, in *Trans. Highl. and Ag. Soc.* (1884), and works cited under STIRLING.

Stitchel, a village and a parish of N Roxburghshire. The village occupies a beautiful site, 405 feet above sea-level, and $\frac{3}{4}$ miles NNW of Kelso, under which it has a post and telegraph office. It has greatly decayed since the close of the 18th century, when it was famous for the open-air preachings or 'holy fairs' of its Seesession church; and it was the first place in the county visited by the cholera in 1832. In 1894 a row of handsome cottages, with inscribed tablet, was erected by Mrs Baird of Stitchel House, to the memory of her husband and son, the former of whom died in 1870 and the latter in 1893. The cottages have been fitted up with every modern convenience, and each has a garden behind and a plot in front.

The parish, united ecclesiastically since 1640 to HUME in Berwickshire, is bounded SE by Ednam, and on all other sides by Berwickshire, viz., S and W by Nenthorn, N by Hume, and NE by Eccles. Its utmost length, from ENE to WSW, is $3\frac{1}{2}$ miles; its breadth varies between $1\frac{1}{2}$ and $2\frac{1}{2}$ miles; and its area is 2803 $\frac{1}{2}$ acres, of which 5 are water. EDEN WATER, a capital trout stream, winds $1\frac{1}{2}$ mile east-by-northward along the southern boundary, and forms, near Newton-Don, the beautiful waterfall, 40 feet high, of Stichel Linn. Sinking to close on 200 feet above sea-level, the surface thence rises north-north-westward, till at Sweethope Hill it attains a maximum altitude of 731 feet. The rocks are chiefly eruptive and Devonian; and the soils are variously argillaceous, loamy, and gravelly. Some of the land is naturally wet and cold, but all has been greatly improved, and most is in a state of high cultivation. The estate of Stichel, along with the adjoining property of Gordon, was conferred by David I. on the founder of the illustrious family of Gordon in 1124. When they transferred their chief seat to the North, on obtaining from King Robert Bruce a grant of the forfeited estates of the Earl of Athole, Sir Adam de Gordon bestowed the barony of Stichel on his second son William, the founder of the family of the Gordons of Kenmure. It remained in their possession until 1628, when the estate was sold by Sir John Gordon of Lochinvar (afterwards Viscount Kenmure) to Robert Pringle, head of the Newhall branch of the ancient Pringle family, whose grandson received a baronetcy in 1683, and whose great-great-grandson, Sir John Pringle, Bart. (1707-82), an eminent physician and natural philosopher, was born at Stichel House. About 1855 the estate, comprising 4339 acres, was sold by the late Sir John Pringle, fifth baronet, to the Bairds of Gartsherrie for their youngest brother David, and on his death unmarried it devolved on his next elder brother George (d. 1870), and then on his son, George Alexander Baird (b. 1861; d. 1893). Stichel House, 5 miles NNW of Kelso, is a large and splendid edifice of 1866, whose tower, 100 feet high, commands a magnificent view of the country for 30 miles round. The grounds possess much beauty. Stichel is in the presbytery of Kelso and the synod of Merse and Teviotdale; the living is worth £386. The parish church contains 320 sittings, as also does the U.P. church, this being an Early Decorated building, erected in 1877 at a cost of £2000. Stichel public school, with accommodation for 113 children, had (1893) an average attendance of 56, and a grant of £56, 3s. Pop. (1801) 506, (1831) 434, (1861) 425, (1871) 388, (1881) 342, (1891) 314.—*Ord. Surv.*, sb. 25, 1865.

Stobbs. See GOREBRIDGE.

Stobbs Castle. See STOBBS CASTLE.

Stobcross. See GLASGOW.

Stobhall, a mansion in Carrigill parish, Perthshire, on a high narrow tongue of land, on the wooded left bank of the river Tay, 8 miles N by E of Perth. It is an old edifice, bearing date 1578, but supposed to have been founded fully 400 years earlier. The chapel—probably once the banquet-hall—has a curious painted roof, with representations of all the kings of the earth; and its windows are now filled with stained heraldic glass. The gardens are a miniature of those at Drummond Castle; and many of the trees on the estate are of great size and beauty. By his marriage, in 1360, with the daughter and co-heiress of Sir William de Montifex, justiciar of Scotland, the estate went to Sir John Drummond, and has continued since in the possession of his descendants, being now owned by the Earl of Ancaster.—*Ord. Surv.*, sb. 48, 1868. See DRUMMOND CASTLE and chap. xxviii. of T. Hunter's *Woods and Estates of Perthshire* (1888).

Stobhill, a *quoad sacra* parish of Edinburghshire, whose church stands 5 furlongs NNE of the village and station of GOREBRIDGE. It is in the presbytery of Dalkeith and the synod of Lothian and Tweeddale. The minister's stipend is £220 with manse. In 1893 a mission station was started at Prestonholm, an outlying

district of the parish. The village of Stobhill is in the civil parish of Borthwick, and has a Free church and a large public school. Pop. of *q.s.* parish (1871) 2447, (1881) 3065, (1891) 3501, of whom 485 were in Borthwick, 1108 in Cockpen, 717 in Newbattle, and 1191 in Temple.

Stobo (anc. *Stoboc*, 'the hollow of stobs or stumps'), a parish of central Peeblesshire, containing Stobo station (with a post and railway telegraph office) on the Peebles branch of the Caledonian, $12\frac{1}{2}$ miles E by N of Symington Junction and $6\frac{1}{2}$ WSW of Peebles. The present parish since 1742 has comprehended part of the ancient parish of DAWICK. It is bounded N by Newlands, NE by Lyne and Peebles, E by Manor, S by Drummelzier, SW and W by the united parish of Kilbucho, Broughton, and Glenholm, and NW by Kirkurd. Its utmost length, from E to W, is $5\frac{1}{2}$ miles; its utmost breadth, from N to S, is $4\frac{1}{2}$ miles; and its area is 10,372 $\frac{1}{2}$ acres, of which 71 are water. From the influx of Biggar Water in the SW to the influx of Lyne Water in the E, the Tweed has here a north-easterly course of $6\frac{1}{2}$ miles— $3\frac{1}{2}$ miles east-north-eastward along the Drummelzier border, $2\frac{1}{2}$ miles north-north-eastward across the interior, and $1\frac{1}{2}$ mile east-north-eastward along the Manor border. BIGGAR Water flows $1\frac{1}{2}$ mile eastward along the Kilbucho boundary, and LYNE WATER $4\frac{1}{2}$ miles south-eastward along the Newlands, Lyne, and Peebles boundary; whilst the Tweed's chief affluents from Stobo itself are Hophead or Weston Burn, rising on Broughton Heights at an altitude of 1550 feet, and running $4\frac{1}{2}$ miles south-eastward through the interior, and Harrow Burn, running $2\frac{1}{2}$ miles south-eastward to its mouth near the parish church. Sinking in the extreme E, at the confluence of Lyne Water with the Tweed, to close on 550 feet above sea-level, the surface thence rises to 1266 feet at Quarry Hill, 1495 at Torbank Hill, 1760 at Pennalla, and 1872 at Broughton Heights, which culminate on the meeting-point of Stobo, Kilbucho, and Kirkurd parishes. The valley of the Tweed here, whilst possessing much natural beauty, is rich in artificial embellishment; and some of the hills are green, but most are covered with heath, all those of the western district forming a continuous upland, fit only for sheep pasture. Greywacke, more or less schistose, is the prevailing rock; and coarse clay slate, of a dark blue colour, and well adapted to roofing purposes, was quarried so long ago as 1661. The soil on the hills is mostly moorish; and that in the vales presents no little variety, but is generally a light fertile loam, incumbent on gravel. Barely one-sixth of the entire area is in tillage; about 500 acres are under wood; and nearly all the remainder is hill-pasture. The 'Black Dwarf,' David Ritchie (1740-1811), was born at Slatoc Quarries (see MANOR). Antiquities are two cairns and two Caledonian standing-stones on Sheriffmuir; the three hill-forts of Kerr's Knowe, Hog Hill, and Dreva Craig; and the site of a feudal keep, called the Lour, on the S side of the Tweed. Stobo Castle, near Stobo station and the Tweed's left bank, is a spacious castellated pile, with battlements and round flanking towers, erected in 1805-11 from plans by J. & A. Elliot. The grounds are well laid out and finely wooded, four of the trees (an oak, ash, sycamore, and beech) being described among the 'old and remarkable trees of Scotland' in *Trans. Highl. and Ag. Soc.* for 1880-81. The barony of Stanhope and Stobo, once the property of the Murrays, was purchased in 1767 for £40,500 by James Montgomery, who, having in 1775 been created chief baron of the exchequer in Scotland, received a baronetcy in 1801. His grandson, Sir Graham Graham-Montgomery, third Bart. (b. 1823; suc. 1839), Conservative M.P. for Peeblesshire 1852-80, is present proprietor. (See KINROSS). Stobo is in the presbytery of Peebles and the synod of Lothian and Tweeddale; the living is worth £234. The parish church, 9 furlongs NNE of the station, on a rising-ground beside the Tweed, is an interesting old edifice, consisting of chancel, nave, S porch, and square saddle-roofed tower with a bell-cote. Portions of it are Norman or Romanesque, as old as or older than the 13th

century; but the general features belong to the Pointed style of architecture. The jousts still hang on the porch; and in the N wall of the chancel is a canopied tomb, whose every stone has a 'W' carved on it, and within which a skeleton, four German coins, and a Scottish one, apparently of James V. (1537), were found in 1863, when the church was well restored at the cost of the present proprietor. Stobo church is an example of what is called a 'plebania' or mother church, having subordinate churches or chapels within its territory. These were Dawick, Drummelzier, Kingledors, Tweedsmuir, Broughton, Glenholm, and Lyne. The parson was styled Dean, and in early times the office was hereditary. We find mention made of Stobo in reference to church matters in 1116, when the rectory of Stobo was converted into a prebend of Glasgow; and of all the prebends of Tweeddale, Stobo was the most valuable. 'The rights of the manor of Stobo,' says Chalmers in his *Caledonia*, 'were as fiercely contested as the sovereignty of Scotland.' The public school, with accommodation for 68 children, had (1898) an average attendance of 41, and a grant of £50, 0s. 6d. Pop. (1801) 338, (1831) 440, (1861) 478, (1871) 459, (1881) 467, (1891) 433.—*Ord. Sur.*, sh. 24, 1864.

Stobs Castle, a fine mansion in the upper section of Cavers parish, Roxburghshire, near the right bank of Slitrig Water, and $\frac{3}{4}$ mile S by E of Stobs station on the Waverley route of the North British railway, this being 4 miles S of Hawick, under which there is a post office of Stobs. In 1666 Gilbert Eliott of Stobs, the grandson of 'Gibby wi' the gouden garters,' received a baronetcy; and his youngest great-grandson, George Augustus Eliott, K.B. (1718-90), the gallant defender of Gibraltar, was created Lord Heathfield in 1787. Sir William Francis-Augustus Eliott, eighth Bart. (b. 1827; suc. 1864), is present proprietor. See *WELLS*.—*Ord. Sur.*, sh. 17, 1864.

Stockbridge. See *EDINBURGH* and *COCKBURNSPATH*. **Stockbriggs**, an estate, with a mansion, in Lesmahagow parish, Lanarkshire, on the river Nethan, $3\frac{1}{2}$ miles SSW of Lesmahagow village. It was purchased from the Altons in 1879 by James Waddell, Esq., and is now owned by John A. Waddell, Esq.

Stoer, a *quoad sacra* parish in Assynt *quoad civilia* parish, SW Sutherland, whose church (1829) stands near the shore of the Bay of Stoer, 5 miles SSE of the Point of Stoer and $\frac{2}{3}$ NW of Lochinver. It is in the presbytery of Dornoch and the synod of Sutherland and Caithness. The minister's stipend is £155 with manse. There are a post and telegraph office of Stoer under Lairg, a Free church, and a public school. Pop. of parish (1871) 1507, (1881) 1391, (1891) 1281.—*Ord. Sur.*, sh. 107, 1881.

Stonebyres, a mansion in Lesmahagow parish, Lanarkshire, 3 furlongs from the left bank of the Clyde, and 3 miles W of Lanark. A lofty semi-Baronial edifice, it was mainly rebuilt by the late James Monteath, Esq., from designs by Mr Baird of Glasgow; but its oldest portion, embraced in the modern structure, is ascribed to the 14th century, and has walls 8 to 10 feet high. The ancient banqueting-hall is the finest perhaps in the county. The estate was held by the Weirs or Veres from the 15th century till 1842, when it was sold to Mr Monteath. He was succeeded by his kinsman, Gen. Sir Thomas Monteath Douglas, K.C.B. (1787-1868), whose only surviving daughter in 1861 married Sir William Monteath Scott, Bart. of ANCRUM. Stonebyres Linn, the last and broadest of the Falls of CLYDE, $1\frac{1}{2}$ mile below Lanark Bridge, bears a general resemblance to CORRA LINN, but is commonly admitted to be of a less striking character. Like Corra Linn it encounters two ledges of rock, but in spaces the water seems to fall in one unbroken sheet from a height of 70 or 80 feet into the deep 'Salmon Pool,' beyond which the fish can never ascend. Seen from below, the dark shelving rocks and the wooded banks of the stream present an exquisite contrast to the snowy foam of the cataract.—*Ord. Sur.*, sh. 23, 1863.

Stonefield, a thriving seat of industry and population 398

in Blantyre parish, Lanarkshire, $2\frac{1}{2}$ miles NW of Hamilton and $8\frac{1}{2}$ SE of Glasgow, under which it has a post office. Its Established church, which was founded in 1878, was erected into a *quoad sacra* parish in 1890, and contains 900 sittings. (See *BLANTYRE*.) Pop. (1871) 395, (1881) 4511, (1891) 5581, of whom 2652 were in Stonefield proper, 768 in Baird's Rows, 1436 in Dixon's Rows, and 725 in Springwell; of *q.s.* parish (1891) 4904.—*Ord. Sur.*, sh. 23, 1865.

Stonefield, a modern mansion in South Knapdale parish, Argyllshire, on the W shore of Loch Fyne, 2 miles N of Tarbert. Its owner is Colin George Pelham Campbell, Esq. (b. 1872; suc. 1887).—*Ord. Sur.*, sh. 29, 1878.

Stonefield, a hamlet in Muckairn parish, Argyllshire, on the S shore of Loch Etive, $3\frac{1}{2}$ miles WNW of Tainult station on the Callander and Oban section of the Caledonian railway.

Stonehaven (commonly *Stanchive*), a post-town, seaport, police burgh (1839), and seat of some trade, and the county town of Kincardineshire. It has a railway station on the Caledonian and North British line from Perth to Aberdeen, and by rail is 16 miles SSW of the latter city. By road it is 10 miles NNE of Bervie. Its site is the head of the bay of the same name at the influx of the Carron and Cowie, and the place consists of an old town and a new. The old town, in the parish of Dunnottar, on the S bank of the Carron, consists chiefly of two main streets with closes branching off, and is irregularly built. It is inhabited mostly by fishermen. The new town, which is now the more important, occupies the point of land to the NW at the junction of the Carron and Cowie, in the parish of Fetteresso. It is well built, and has its streets, laid off at right angles, passing out from a central square. A bridge across the Carron connects the two towns, and another carries the N road over the Water of Cowie. In the old town the only thing of note is the old well and the public barometer set up in 1852. In the new town there is a market house in the square, erected in 1827, with a steeple 130 feet high. In Allardyce Street is the town-hall, in the Italian style, erected in 1877-78 at a cost of £4000. The hall contains a picture of 'The Coming Storm,' presented by the architect, Mr W. Lawrie, Inverness. Besides a public hall, it comprises news, billiard, and reading rooms. The county buildings contain court-rooms and other accommodation for the sheriff courts. The county prison, altered, enlarged, and legalised in 1867, has been, since the passing of the Prisons Act, used only as a 14 days' prison, prisoners for longer periods being sent to Aberdeen. The Established churches are noticed under the parishes of DUNNOTTAR and FETTERESSO. In the town itself are a Free church, a U.P. church (1803; 400 sittings), the Roman Catholic church of the Immaculate Conception (1877; 80 sittings), and St James's Episcopal church (1875-77; 400 sittings), a Norman and Early Transition edifice, built at a cost of £3600 from designs by Dr Rowand Anderson. A chancel was added in 1885 from designs by Mr Clyde, Aberdeen. Stonehaven public school, under the Fetteresso school board, on a high bank to the NW, was built in 1876 at a cost of £4000, and contains accommodation for 545 children. Donaldson's benevolence is now managed by the school board. The harbour, consisting of two basins, was originally a small natural bay to the S of the mouth of the Carron, sheltered on the SE by Downie Point. The old harbour and quay to the N date originally from very early times, a grant of them having been obtained by the feuars from the Earl Marischal in the beginning of the 17th century. The situation is convenient, but the harbour itself was poor till, under an Act of Parliament obtained in 1825, it was vested in harbour commissioners; improvements were executed in 1826, the sea wall and breasting of the new harbour to the S being built, and other improvements made, from designs by Mr Robert Stevenson. Subsequently jetties were added so as to protect vessels in the new basin from damage during storms. During these operations a large rock

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to the S, giving name to the place—Stane-hive or Stone-haven or harbour—was removed. The whole harbour area is about 5 acres. There are good leading lights. The harbour has become very important in connection with the herring-fishing industry, over 100 boats fishing from the port every season. In 1893, 105 first-class, 40 second-class, and 49 third-class boats, employing 483 resident fishermen and boys, were in Stonehaven fishery district, which includes Stonehaven itself and the villages of Shieldhill, Catterline, Cawton, Cowie, and Skateraw; while the number of boats fishing within it were 68, employing 443 fishermen and boys, and 277 other persons. The value of the boats belonging to the district in the same year was £11,865, of the nets £7678, and of the lines £3274. The old town has the status of a burgh of barony, though the claim is disputed. The Act of Parliament of 1607, ratifying the change of the county town from KINCARDINE, speaks of it as 'the burgh of Stanehive,' but the original Act of 1600 merely calls it 'the Stanehive.' From 1624 the superior—the Earl Marischal—granted the feuars the privilege of nominating two persons to serve as bailies. After the forfeiture of the Marischal family the feuars elected managers, but from 1797 till 1812, under Lord Keith, the old custom was re-established. In consequence of quarrels it was discontinued from 1812 to 1823, but was then restored, and now the council of the old town consists of 2 bailies, a dean of guild, and three councillors. The present superior of the old town is the Marchioness-Dowager of Lansdowne, and of the new town, Alexander Baird of Urie. The affairs of the new town are attended to by a provost, 2 bailies, and 9 councillors. The manufacture of cotton and linen, at one time extensively carried on, has long been extinct; and the only industries in the neighbourhood now, apart from fishing and fish curing, are a large distillery at Glen Urie, and a small wool mill, both, however, outside the town. In the town there are several net and rope works, a tannery, and a brewery. There are a considerable number of summer visitors every year. The summer residence of Professor M'Kendrick, of Glasgow University, on Main's Hill, was erected in 1894-95. Stonehaven has a head post office, with money order, savings bank, insurance, and telegraph departments, branch offices of the Bank of Scotland, North of Scotland, and Town and County Banks, a branch of the National Security Savings Bank, a temperance savings bank, and several hotels. There are also a farmers' society, a news and reading room, a literary society, a horticultural, ornithological, and industrial society, a choral union, an orchestral society, cricket and football clubs, a Conservative club, a masonic lodge (St John's, No. 65), a court of the Ancient Order of Foresters, a company of rifle volunteers and a battery of artillery volunteers, and the usual religious and philanthropic associations. The ministers of Fetteresso and Dunnottar and of St James's Church are trustees of Stephen's Mortification. Water and gas are supplied by private joint-stock companies. The *Independent Stonehaven Journal* (1845) is published every Thursday. Among the natives of Stonehaven have been the Rev. Alex. Jolly, D.D., bishop of Moray (1756-1838); Dr Longmuir, lexicographer and miscellaneous writer; and Robert Duthie, poet, son of a Stonehaven baker (1826-65). There is a weekly market on Thursday, and cattle fairs on the Thursday before Candlemas, on the third Thursday of June, on the Thursday before Lammas, on the second Thursday of October, and on the Thursday before Christmas, all *o.s.*; and there are hiring fairs on the day before 26 May, and the day before 22 Nov., or if those days be Mondays, on the Saturdays before. Sheriff and small debt courts for Kincardineshire are held every Wednesday during session, and there are justice of peace courts on the first Saturday of every month. Pop. of entire town (1841) 3012, (1861) 3009, (1871) 3396, (1881) 3957, (1891) 4500, of whom 2122 were males and 2378 females. Houses (1891) inhabited 851, uninhabited 76, and being built 15. Of the whole population 1946 were in the old town and 2554 in the

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new town, and of the inhabited houses 227 were in the former and 624 in the latter.—*Ord. Sur.*, sh. 67, 1871.

Stonehaven Bay is the shallow depression of the coast near the head of which Stonehaven stands, and is bounded by Garron Point on the N and Downie Point on the S. It measures fully $1\frac{1}{2}$ mile between these from NNW to SSE, and three-fourths of a mile at right angles to this. The depth along this line is from 30 to 50 fathoms, and the anchorage is good, the bottom being a stiff clay.

Stonehouse, a town and a parish in the Middle Ward of Lanarkshire. The town, which lies 450 feet above sea-level, near the right bank of Avon Water, by road is $3\frac{3}{4}$ miles ENE of Strathaven and $7\frac{1}{2}$ SSE of Hamilton, whilst its station, on a branch-line of the Caledonian, is $3\frac{1}{2}$ miles SSW of Ayr Road Junction and $18\frac{1}{2}$ SE of Glasgow. Mostly a growth of the 19th century, it is a fine, airy, thriving place. It comprises a main street extending 7 furlongs south-westward along the highroad from Edinburgh to Ayr, two streets built on a specified plan, and some small lanes or subordinate parts. Its houses, sixty years ago, were mostly of one storey and generally thatched; but now not a few are substantial, well-built, slated, two-storeyed structures. The town's rapid advances about the middle of the century, both in character and population, arose from the liberal encouragement given to feuars and builders by the late Robert Lockhart, Esq. of Castlehill. A large portion of the inhabitants are miners, weavers, and tradesmen. Stonehouse has a post office, with money order, savings bank, and telegraph departments, a branch of the Union Bank, a heritable security savings bank, a gas company, agricultural and horticultural societies, Freemasons' and Shepherds' lodges, a public hall, and fairs on the last Wednesday of May, the third Wednesday of July, and the last Wednesday of November. Pop. of town (1841) 1794, (1861) 2585, (1871) 2623, (1881) 2615, (1891) 2868, of whom 1434 were males. Houses (1891) inhabited 596, vacant 5, building 3.

The parish contains also Sandford village, at the SW border, $3\frac{1}{2}$ miles SW of the town and $1\frac{1}{2}$ mile SE of Strathaven. It is bounded NE and E by Dalsersf, SE by Lesmahagow, SW by Avondale, W by Avondale and Glassford, and NW by Hamilton. Its utmost length, from N to S, is $5\frac{1}{2}$ miles; its utmost breadth is $2\frac{1}{2}$ miles; and its area is 6311 $\frac{1}{2}$ acres, of which 70 $\frac{1}{2}$ are water. Avon Water winds $4\frac{1}{2}$ miles north-north-eastward along the Avondale and Glassford boundary, 2 north-north-eastward across the interior, and $2\frac{1}{2}$ north-north-westward along the Dalsersf boundary. It thus has a total course here of $8\frac{1}{2}$ miles, though the point where it first touches and that where it quits the parish are only 5 miles distant as the crow flies. KYPE Water flows to it $3\frac{1}{2}$ miles west-north-westward along all the south-western border, and CANDEE Water $2\frac{1}{2}$ miles north-north-westward along the southern half of the Dalsersf boundary. Sinking in the extreme N to close on 200 feet above sea-level, the Vale of Avon Water is very romantic, especially below the town of Stonehouse. From it the surface rises gradually to 533 feet near Crofthead, 642 at Udston, and 734 near Hazeldean. The parish thus mainly consists of gentle ascents, higher in the S than in the N, but nowhere hilly, and nearly all subject to the plough. Its general appearance is pleasing and rich. Wood was formerly scarce, but is now abundant enough to afford both shelter and embellishment. The rocks belong to the Carboniferous formation, with protrusions of trap. Prime limestone has been largely worked; and ironstone of excellent quality occurs in thin beds and in round isolated masses above the limestone. Coal is abundant, but has been chiefly used in the lime-works; sandstone, suitable for building, is also plentiful; and the trap is of a quality well adapted for road-metal. A sulphurous spring, called Kittymuir Well, situated on the banks of the Avon, long enjoyed some medical repute for cutaneous diseases. The only noticeable antiquities are vestiges of two old

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castles, called Coat Castle and Ringsdale Castle, surmounting cliffs on the banks of the Avon, but unstoried by either record or tradition. William Hamilton, D.D. (1780-1835), an eminent minister of the Church of Scotland, was a native. Major-General G. A. Lockhart, C.B., of Castlehill, owns more than one-half of the parish. Stonehouse is in the presbytery of Hamilton and the synod of Glasgow and Ayr; the living is worth £277. The parish church is a handsome modern building, with a neat spire, and upwards of 900 sittings. The Free church, rebuilt in 1874, is a good Perpendicular structure, with a spire 114 feet high, and nearly 700 sittings. The U.P. church was rebuilt in 1879. Four public schools—Cannethan Street, Greenside Infant, Sandford, and Townhead—with respective accommodation for 178, 143, 100, and 230 children, had (1893) an average attendance of 151, 123, 66, and 202, and grants of £153, 5s. 6d., £95, 3s., £70, 17s. 6d., and £220, 15s. 6d. Pop. (1801) 1259, (1831) 2859, (1861) 3267, (1871) 3177, (1881) 3173, (1891) 3400.—*Ord. Sur.*, sh. 23, 1865.

Stonelaw. See RUTHERGLEN.

Stoneridge or Stainrigg, a mansion in Eccles parish, Berwickshire, 6 miles NW of Coldstream.

Stoneykirk, a post-office village and a coast parish in the Rhinns of Galloway, SW Wigtownshire. The village stands 2 miles N by W of Sandhead and 5½ SSE of Stranraer, and has a post office.

The parish, containing also the larger village of SANDHEAD, comprises the ancient parishes of Stephenkirk (Steeniekirk and Stoneykirk), CLACHSHANT, and Tosker-ton or KIRKMAIDRINE—all three united about the middle of the 17th century. It is bounded N by Inch, NE by Old Luce, E by Luce Bay, S by Kirkmaiden, W by the Irish Channel, and NW by Portpatrick. Its utmost length, from N to S, is 8½ miles; its breadth decreases southward from 6½ to 2½ miles; and its area is 32¼ square miles, or 20,769½ acres, of which 1274 are foreshore and 14½ water. The E coast, 6½ miles in extent, to the N of Sandhead is fringed by the Sands of Luce, a continuous belt of sandy foreshore, 3 to 5½ furlongs broad. S of Sandhead it is stony but still low, attaining a maximum altitude of 70 feet above sea-level. The W coast, measuring 8½ miles, is mostly bold and rocky, and in places precipitous, rising rapidly to 125 feet at Grennan Point, 150 at Ardwell Point, 384 at Cairnmon Fell, and 437 near Cairngarnoch. It is slightly indented by Ardwell Bay, Cairngarnoch Bay, and Port-of-Spittal Bay, and several minor inlets. The interior ascends slowly from the E, more abruptly from the W, abounds in inequalities, and tumulations, and culminates on Barmore Hill at an altitude of 463 feet above sea-level. Piltanton Burn runs 3½ miles east-by-northward along all the Inch boundary; and two or three considerable burns rise near the W coast, and run eastward to Luce Bay. The rocks are chiefly Silurian. The soil of about 650 acres on the E coast, and of 60 on the W, is barren sand; that of the greater part of the eastern and southern districts is light, dry, sharp, and tolerably fertile; and that of much of the western district is heavy vegetable mould, reclaimed from heath and moss. Rather more than one-ninth of the entire area is pastoral or waste; about 370 acres are under wood; and the rest of the land is in tillage. The principal antiquities are noticed under ARDWELL, BALGREGGAN, and GARTHLAND MAINS. A prominent natural curiosity is the Goodwife's Cave, situated near Port Float, and yielding a very remarkable echo. Stoneykirk is in the presbytery of Stranraer and the synod of Galloway; the living is worth £269. The parish church was built in 1827 at a cost of £2000, and is a handsome Gothic edifice, containing 660 sittings. There is also a Free church; and four public schools—Ardwell, Meoul, Sandhead, and Stoneykirk—with respective accommodation for 160, 70, 117, and 121 children, had (1893) an average attendance of 106, 67, 80, and 108, and grants of £102, £76, 0s. 6d., £69, 5s. 6d., and £103, 9s. Pop. (1801) 1848, (1831) 2966, (1861) 3228, (1871) 2993, (1881) 2766, (1891) 2703.—*Ord. Sur.*, sh. 3, 1856.

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Stoneywood, a village in Newhills parish, Aberdeenshire, on the right bank of the Don, 1 mile N of Auchmull. It has large paperworks, two public schools, and an Established chapel of ease (1879; 800 sittings). Near it is Stoneywood House.

Stoop. See GREENBRAE.

Stormont, a district of Perthshire, bounded on the E by the Erich, on the S by the Isla and the Tay, on the W by the Tay, and on the N by the frontier mountain-rampart of the Highlands, from the foot of Strathardle to a little distance S of the foot of Strath-Tummel. The district measures 14 miles in length from E to W, and about 7 or 8 in mean breadth. It comprehends the greater part of the parishes of Blairgowrie, Clunie, Caputh, and Dunkeld, all Lethendy and Kinloch, and about a third of Bendocho. For an exquisite combination of land, wood, and water, lowland expanses and Highland barriers, romantic glens and picturesque lochlets, this district, though excelled in its turn for other combinations, or for a higher perfection of some of the scenic elements, excels every other in even panoramic Perthshire. The best view of its brilliant surface and its numerous pretty lakes is obtained from the summit of Benachally (1594 feet), on the mutual border of Caputh and Clunie; and a charming, though a less extensive and commanding, one, is obtained from the summit of Crag-Roman, a wooded eminence about 1 mile W of Blairgowrie. Stormont gave, in 1621, the title of Viscount in the peerage of Scotland to the ancestor of the Earl of Mansfield. See SCONE.

Stornoway, a parish containing a town of the same name, in the NE of the island of Lewis, Ross and Cromarty. It is bounded E by the Minch, S by the parish of Lochs, SW by the parish of Uig, and NW by the parish of Barvas. There is a compact main portion with a narrow peninsula running out eastward. The length of the mainland portion, from NNE at a point on the coast 9 miles S of the Butt of Lewis south-south-westward to the boundary with Lochs, is about 20 miles; and the extreme breadth is about 6 miles. Some distance S of the centre of this, at the town of Stornoway, an isthmus projects east-north-eastward, between Broad Bay on the N and Loch Stornoway on the S, for 3½ miles, and is at its narrowest point on the E only about 200 yards wide; and from this neck the Peninsula of Eye extends north-eastward almost parallel to the coast-line of the compact main portion of the parish for 7 miles, with an average breadth of 2½ miles. The total area is 67,651·862 acres, of which 2145·419 are water, and 2282·275 foreshore. The coast-line has many indentations, and though there are some fine sandy beaches, the greater portion of it consists of bold shelving rocks or precipitous cliffs. There are a number of caves, one of which, the Seal Cave, at Gress, about 8 miles N of the town of Stornoway, is said to be inferior only to the Spar Cave in Skye. The chief inlets are BROAD BAY, Loch Stornoway or Stornoway Harbour, BAYBLE Bay, and TOLSTA Bay. Stornoway Harbour lies to the S of the isthmus already described, and is a triangular space extending 5 miles north-westward from a line drawn from the S end of Eye Peninsula to the mouth of Loch Ranish, along which line the distance is also 5 miles. The inner portion is thoroughly sheltered, and affords good and safe anchorage. The other inlets are separately noticed. From the coast the surface level of the parish rises gradually westward to the watershed of the island, where a height of 800 feet is reached at Monach and 900 at Ben Barvas. Fresh-water lakes are very numerous, but they are mere lochans, and notwithstanding their number do not cover a large proportion of the area. The principal streams are the Gress, Laxdale, and Creed, the last being the fourth best fishing stream in the island of Lewis. The soil is generally mossy, but there are patches of sand, gravel, and loam. The sub-soil is a red till, so hard that it can hardly be broken even with a pick; and the underlying rocks are Laurentian gneiss, with patches of a Cambrian conglomerate along the NW side of Broad Bay, across the isthmus at the S end of it, and in the S end of the

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Peninsula of Eye. Little more than a narrow belt along the shore was formerly under cultivation, the rest of the surface being a dismal expanse of moor and bog, till after the island passed into the possession of Sir James Matheson in 1844, when large tracts were reclaimed and improved. Sir James also brought about great improvements in cattle rearing, the animals in the Stornoway district being mostly Ayrshires or crosses, much superior to the poor Highland cattle of the rest of the island. The principal mansion is Lews or Stornoway Castle, which stands at the head of Stornoway Harbour, on an eminence to the W of the town, and occupies the site of Seaforth Lodge, the old mansion of the Mackenzies of Seaforth. The seat of Lady Matheson, it is a castellated building in the Tudor style, measuring 170 feet along the principal face to the E, and 153 from E to W. The octagon tower reaches a height of 94 feet, and the square flag tower 102 feet. There are 76 rooms, and the whole was completed in 1870 at a cost of £60,000. The policies were reclaimed at a cost of £48,838, from very uneven and rugged ground, but they are now so beautiful and well laid out that both gardens and grounds compare favourably with any in Scotland. They contain extensive hothouses, 10 miles of carriage drives, 5 miles of foot walks, and a fine monument erected in memory of Sir James. (See ACHANRY.) At the head of the Harbour stands a small fragment of the old Castle Macnicol, which is said to have been built before the Norse conquest of the Hebrides, and to have been taken from the Macnicols by a Scandinavian leader named Leod, from whom the Macleods of Lewis sprung. Near it was a small fort erected by Cromwell, the garrison of which, tradition says, were all slain by the people of the island. At Gress there is a cave measuring 200 feet in length. In 1894-95 a road was formed from Stornoway to Carloway at an expense of £15,000.

The parish, which contains the ancient chapels of Stornoway, Gress, and Eye,* and is divided ecclesiastically into Stornoway proper and the *quoad sacra* parish of KNOCK, is in the presbytery of Lewis and the synod of Glenelg, and the living is worth £210 a year. The churches in the town are afterwards noticed, and there is an Established *quoad sacra* church at Knock, and Free churches at GARRABOST and BACK. Under the School Board Aird, Back, Bayble, Knock, Laxdale, Nicolson, Sandwickhill, Tolsta, and Tong schools, with respective accommodation for 180, 270, 210, 120, 190, 253, 160, 130, and 92 pupils, had (1892) an average attendance of 186, 198, 201, 102, 174, 157, 133, 91, and 93, and grants of £190, 17s., £172, 18s., £204, 11s., £84, 16s. 6d., £186, 6s., £204, 13s. 6d., £103, 16s. 9d., £81, 10s., and £87, 2s. The industries are noticed in connection with the town. The villages are Back, Bayble, Coll, Garrabost, Knock, Sandwick, Swordle, Tolsta, Tong, and Vatsker, all of which are separately noticed. Back village suffered severely in the loss of life among the fishermen from the calamitous storm that occurred towards the close of 1894. The chief landowner is Lady Matheson. Pop. (1801) 2974, (1831) 5422, (1861) 8668, (1871) 9510, (1881) 10,889, (1891) 11,799, of whom 6382 were females, while 8375 were in the ecclesiastical parish.—*Ord. Sur.*, shs. 105, 106, 1858.

Stornoway, a police burgh, burgh of barony, seaport, and the chief town in the Outer Hebrides, in the parish just described, on the neck of land between Broad Bay and Stornoway Harbour, near the head of the latter. It is 22 miles in a straight line S by W of the Butt of Lewis, and by steamer 43 miles NW of Poolwee, 44 W of Lochinver, 51 WNW of Ullapool, 59 N by W of Portree, and 180 N by W of Oban. It was made a burgh of barony by James VI., but long remained a mere hamlet inhabited by poor fishermen, and though some improvement took place when attention was first directed to the Hebridean fisheries, its present importance is largely due to the exertions of its former proprietor, and more particularly to the

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energy and enterprise of the late Sir James Matheson (1796-1878), and the large sums of money which he spent on improvements from which he could never expect a return adequate to his outlay. Before his time the place had been dependent for all communication with the mainland on a sailing mail packet, but on his various attempts to introduce steam communication over £180,000 were lost, while £7000 were spent on the construction of a patent slip, £2225 for a quay for the steamers, and large sums on the erection of curing-houses, the introduction of gas and water, the construction of roads and bridges, and the erection of schools and payment of teachers' salaries. In late years, owing to the *Princess of Thule* and others of Black's novels, 'Styornoway' has become known all over the English-speaking world, and indeed, apart from the halo of romance which has thus been thrown around it, visitors are astonished to find such a flourishing place in such a remote corner.

The town now consists of about a dozen fairly well-built streets, with a number of straggling suburbs. There is a reading-room and library, a drill hall, a court house, a prison, a custom house, a sailors' home, a fire-engine station, lifeboat station, coastguard station and royal naval reserve battery, a rifle club, a masonic hall, and a new fish mart erected for the harbour commissioners in 1894 at an expense of £1200. There are in the town Established, Free (2), U.P., and Episcopal churches, and several schools. The parish church, built in 1794 and repaired in 1831, received additions in 1885. The English Free church was built in 1878, and contains 630 sittings. The Gaelic Free church, erected in 1894, is seated for 400, and has a hall in connection. The U.P. church was erected in 1873, and the Episcopal church (St Peter), with sittings for 120, in 1839. The latter was reseated, decorated, and had a new altar and reredos erected in 1892. At Lady Matheson's Female Industrial School, instruction is given in the ordinary branches and in needlework; and education is also given at the Nicolson Public School—partly endowed and the site granted free by Sir James Matheson—and a Free Church school. Stornoway is a head port, including not only all the creeks and harbours of the Outer Hebrides, but also those of Skye and Mull; and the vessels belonging to it, in Jan. 1894, were 13 sailing vessels, whose total capacity was 897 tons. During the period of the herring fishing the animated sight of some 500 boats leaving the harbour in the evening may be seen. The harbour proper, at the upper end of Stornoway Harbour or Loch Stornoway, affords safe and ample anchorage, being sheltered on the S by Arnish Point, and on the W and N by high land. There is a good stone pier, with quays and breast-walls; while the patent slip is capable of accommodating ships of 800 tons. Harbour affairs are managed by a body of 10 commissioners. Guidance is afforded to vessels entering or departing at night, by a lighthouse (1852) on Arnish Point, which shows a bright white revolving light every half-minute. This, which is visible at a distance of 13 nautical miles, illuminates two arcs, one towards the entrance to the loch, and the other up the harbour; and by means of reflection from glass prisms placed on the top of a beacon, it also marks a low-tide rock about 200 yards distant, by an apparent light. There is a fixed light on the wharf, showing white towards the town, and red over the harbour. Additional wharves were erected in 1893-94, from the outer ends of which fixed white lights are shown. The tonnage of vessels entering all the harbours belonging to the port, from and to foreign and colonial ports and coastwise, with cargoes and ballast, was:—

Year.	ENTERED.			CLEARED.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1860	26,277	539	26,816	23,854	214	24,068
1874	75,113	647	75,760	75,534	517	76,051
1883	123,383	1157	124,570	119,949	1456	121,405
1893	263,961	7713	271,574	258,965	6246	265,094

* The ancient church of Stornoway was dedicated to St Lennan, that of Gress to St Aula, and that of Eye to St Columba.

There is a custom house, but the dues are practically *nil*. The great article of export is fish, but cattle, horses, sheep, and wool are also despatched. The imports are miscellaneous, including coal, lime, slates, timber, dress-goods, and provisions. Steamers ply between Glasgow and Stornoway twice a week; between Granton and Stornoway once a week during the herring fishing. A steamer likewise calls once a week on her route from Liverpool to Leith, and also once a week on the return journey.

Stornoway is also the centre of the greatest of the Scottish fishery districts, embracing the whole of the Outer Hebrides. In 1893 the district contained 157 first-class boats, 366 second-class boats, and 561 third-class boats, finding employment for 4581 fishermen and boys. The value of the boats was £22,795, of the nets £8647, and of the lines £9214. In the same year 721 boats fished in the district, and employed 5047 men and boys and 3114 other persons, while there were 35,597 barrels of herrings cured. Fully three-fourths of the total barrels cured were exported to St Petersburg. In the same year the number of cod, ling, and hake cured was 355,613, while the value of the different kinds of fish sold fresh was over £26,745. There are two small boat-building yards, rope and sail works, a patent slip and steam saw-mill, a chemical work, and a fish-carrying company; while there are the usual local industries. The feuars and burgesses obtained in 1825 a charter from the superior, empowering them to elect 2 bailies and 6 councillors to manage the affairs of the community; but municipal affairs are now attended to by a provost, 2 bailies, and 6 commissioners acting under the Burgh Police Act of 1892. The waterworks were transferred to the police commissioners in 1870, but gas is still supplied by a private company. The town has a post office, with money order, savings bank, insurance, and telegraph departments, branch offices of the British Linen Company, Caledonian, and National Banks, and three good hotels. Among miscellaneous institutions may be noticed a battery of Artillery Volunteers, a Coffee House Company, a Horticultural Society, a Literary Association, Oddfellows' and Good Templar lodges, and Young Men's and Young Women's Christian Associations. Horse and cattle fairs are held on the first Tuesday of July and the last Tuesdays of August and October. The sheriff-substitute for the Lewis district is resident here, and ordinary and small debt courts are held every Wednesday during session. Pop. of town (1841) 1354, (1861) 2587, (1871) 2525, (1881) 2627, (1891) 3386, of whom 1568 were males and 1818 females.

Storr. See SNIZORT.

Stotfield. See LOSSIEMOUTH.

Stour. See PAPA STOUR.

Stow (Old Eng. 'place'), a village of SE Edinburghshire, and a parish partly also of Selkirkshire. On all sides sheltered by hills, the village lies, 580 feet above sea-level, near the left bank of Gala Water, and $\frac{1}{2}$ mile E of Stow station on the Waverley route of the North British railway, across the stream, this being 6 $\frac{1}{2}$ miles NNW of Galashiels and 26 $\frac{3}{4}$ (by road 24) SSE of Edinburgh. A pretty little place, of high antiquity, it has a post office, with money order, savings bank, and telegraph departments, a hotel, gaswork, three woollen mills, an engineering work, a bowling club, and hiring fairs on the last Monday of February and the second Tuesday of March. Its town-hall, built about 1854, is a handsome edifice, with a reading-room and library. The parish church, on a sloping bank, a little way S of the village, was erected in 1873-76 at a cost of £3000, and is one of the finest parish churches in the South of Scotland. Designed by Messrs Wardrop and Reid in the Early Decorated Gothic style, it consists of apsidal nave, transept, N side aisle, and NW clock-tower and spire, over 140 feet high, and has 700 sittings, heating apparatus, stained-glass windows, etc. The Free church, $\frac{1}{2}$ mile NNW of the village, dates from Disruption times; and the U.P. church, built in 1871-72 at a cost of £1800, is a neat structure, with a

spire and 500 sittings. In 1893 an augmented water supply was introduced at an expense of over £1000. Pop. (1841) 408, (1861) 397, (1871) 435, (1881) 440, (1891) 421.

The parish, containing also FOUNTAINHALL, BOWLAND, and CLOVENFORDS stations, is bounded N by Fala and Soutra, NE by Channellkirk, E by Channellkirk, Lauder, and Melrose, SE by Galashiels, S by Selkirk and Yarrow, SW and W by Innerleithen, and NW by Heriot, so that, while itself lying in two counties, it is in contact with three others—Haddington, Roxburgh, and Peebles shires. Its utmost length, from N by W to S by E, is 12 $\frac{1}{2}$ miles; its breadth varies between $\frac{3}{4}$ mile and 9 $\frac{1}{2}$ miles; and its area is 57 $\frac{1}{2}$ square miles or 36,380 acres, of which 10,017 $\frac{1}{4}$ belong to Selkirkshire. The Nettleingflat detached portion of the parish, comprising 463 acres, was in 1891 transferred by the Boundary Commissioners to the parish of Heriot. The Commissioners further issued a Draft Order proposing to place the parish wholly in the county of Edinburgh, but owing to the opposition to the proposal left the parish as it was, partly in the two counties. They, however, expressed the opinion that the wider powers conferred on the Secretary for Scotland by Section 51 of the Local Government (Scotland) Act of 1889, should be utilized in the formation of a new civil parish of Caddonfoot, which should embrace the whole of the Selkirkshire part of the parish of Stow. The TWEED flows 2 miles east-south-eastward along all the southern border to the mouth of CADDON Water, which, rising close to the western border at an altitude of 1800 feet, runs 7 $\frac{1}{2}$ miles south-eastward, for the last $\frac{1}{2}$ mile along the Galashiels boundary. From a point 5 furlongs SSE of Heriot station, GALA WATER winds 16 $\frac{1}{2}$ miles south-south-eastward—for the first 7 $\frac{1}{2}$ furlongs along the boundary with Heriot, and for the last 2 $\frac{1}{2}$ miles along that with Melrose—until it quits the parish near Torwoodlee. During this course its principal affluents, all noticed separately, are HERIOT, ARMIT, COCKWY, and LUGGATE Waters; and it is closely followed by 12 $\frac{1}{2}$ miles of the Waverley route of the North British railway, which crosses and recrosses it no fewer than seventeen times. It is subject to violent spates. The Galashiels and Peebles branch of the railway runs, too, for 4 $\frac{1}{2}$ miles along the south-eastern and southern verge of the parish. Beside the Tweed the surface declines to 390, beside Gala Water to 490, feet above sea-level. Chief elevations to the E of the latter stream, as one goes up the vale, are *Caitha or Cathie Hill (1125 feet), Torsonce Hill (1178), *Sell Moor (1388), Catpair Hill (1070), Kittyflat (1079), and a height near Middle Town (1250); to the W, Laidlawstiel Hill (1083), Crosslee or Mains Hill (1157), Knowes Hill (1222), Black Law (1478), *Stony Knowe (1647), Great Law (1666), Fernieherst Hill (1643), *Windlestraw Law (2161), *Eastside Heights (1944), and Rowlison Hill (1860), where asterisks mark those summits that culminate on the confines of the parish. The rocks are mainly Silurian; and the minerals include small quantities of calc-spar, quartz, and steatite. The soils range from loamy alluvium to barren moor; and barely one-third of the entire area is in tillage, rather more than 800 acres being under wood, and the rest chiefly hill-pasture. Ancient camps, varying in size from half an acre to two acres, some of them circular and others oval, occur in at least seven places. Old castles, of various size, generally square towers or parallelograms, were formerly numerous; and the ruins of a number of them still exist (see HOPPRINGLE, LUGGATE WATER, and TORWOODLEE). The church of Stow was formerly possessed by the bishops of St Andrews as a mensal church, and served by a vicar. The whole parish anciently bore the name of Wedale, 'the vale of woe'; and a residence of the bishops on the site of the village originated the name of Stow, and, under the name of the Stow of Wedale, was the place whence they dated many of their charters. The earliest church of Wedale, St Mary's, alleged to date from Arthurian days, stood on the Torsonce estate, near the 'Lady's Well,' and was famed for its possession

of certain fragments of the True Cross. Till about 1815 a huge stone was pointed out here, bearing a so-called footprint of the Virgin Mary. The next church, only superseded in 1876, and still standing in the village, is itself a structure of great though varying antiquity, as attested by a round-headed Romanesque S doorway and a good Second Pointed W window. An extensive forest anciently existed in a district partly within Wedale and partly within Lauderdale, and was common to the inhabitants of Wedale on the W, the monks of Melrose on the S, and the Earls of Dunbar and the Morvilles on the E. Wedale early possessed the privilege of sanctuary in the same manner as Tynninghame; and 'the black priest of Wedale' was one of the three persons who enjoyed the privileged law of the clan Macduff. John Hardying, when instructing the English king how to ruin Scotland, advises him—

'To send an hoste of footmen in,
At Lammesse next, through all Lauderdale,
At Lammere woods, and mossis over-ryn,
And eke therewith the Stow of Wedale.'

William Russell (1741-93), the historian of Modern Europe, was born at Windydoors; and John Lee, D.D. (1780-1859), the Principal of Edinburgh University, at Torwoodlee Mains. Mansions, noticed separately, are BOWLAND, BURNHOUSE, CROOKSTON, and TORWOODLEE. A fifth, Laidlawstiel, 1 mile NE of Thornlie station and 6 miles W by N of Galashiels, belongs to Lady Reay. Giving off since 1870 part of CADDONFOOT *quoad sacra* parish, Stow is in the presbytery of Earlstoun and the synod of Merse and Teviotdale; the living is worth £400. Three public schools—Caitha, Fountain-hall, and Stow—with respective accommodation for 50, 120, and 226 children, had (1893) an average attendance of 30, 77, and 167, and grants of £40, 14s. 6d., £85, 1s., and £146, 2s. 6d. Pop. (1801) 1876, (1831) 1771, (1861) 2171, (1871) 2306, (1881) 2395, (1891) 2201, of whom 442 were in Selkirkshire, 1811 in Stow ecclesiastical parish, and 723 in Caddonfoot.—*Ord. Sur.*, shs. 25, 24, 1865-64.

Straan. See STRACHAN.

Stracathro (old forms, *Strukatherach* and *Stracathirach*; Celt. *Strath-cath-rath*, 'the fort of the battle-field or strath'; or *Strath-cath-roc*, 'the strath of the Cathroc,' this being a conjectured old name for the Cruick), a parish in the NE of Forfarshire, with the centre about 3 miles N of BRECHIN. It is bounded N by the parish of Edzell and by Kincardineshire, E by the parish of Logie-Pert, SE by the parish of Dun, S by the parish of Brechin, SW by the parish of Menmuir, and W by the parish of Lethnot. The boundary is largely natural, being formed on the W and the greater part of the N side by the WEST WATER for 7½ miles upward from its junction with the North Esk. From the mouth of the West Water the line strikes up the North Esk for ½ mile, and then crosses the haugh by Capo to a point farther down, a little below the NE corner of the policies of Stracathro House; follows the E side of the policies; zigzags round Hill of Stracathro, back across the valley of Cruick Water, till, near Chapelton, it takes to the course of a small burn which it follows up to its source, and on between Hill of Lundie and the Brown Caterthun, back to the West Water. The greatest length of the parish, from this part of the West Water south-eastwards, is 6½ miles; the average breadth at right angles to this is a little over 1 mile; and the area is 5304·522 acres, of which 65·954 are water. Nearly 4000 acres are under cultivation, and about 600 are woodland, the rest being pastoral or waste. The central portion along the Cruick is part of the great valley of Strathmore, and from this the surface rises north-westward to the Hill of Lundie (800 feet), and south-eastward to the Hill of Stracathro (400). The former is still bleak and bare, though portions of it have been reclaimed by the present proprietor, Mr John Shepherd; the latter commands a fine view. The soil in the NW is partly workable clay or loam, but a good deal of it is moorish; in the centre a sharp black loam with a gravelly subsoil; and in the SE a deep

clay. The underlying rocks are conglomerates, red sandstones, and beds of limestone belonging to the Old Red Sandstone system. The drainage is effected by the streams already mentioned and the burns that flow to them, the chief being Inchbare Burn. The bridges across the Cruick at Newtonmill and the Manse were built about 1781, that across the West Water at Inchbare in 1787. Three long graves at the E end of the church used to be pointed out as those of three Danish kings who fell in battle here during an incursion. A ford on the North Esk, about ¼ mile above the mouth of the West Water, is called the King's Ford, but it was probably merely the point where the ancient 'King's Highway' crossed the river. Three events of historic importance have taken place within the parish. The first was the battle of Stracathro, where, in 1180, the army of David I. defeated the followers of Angus, Mormaer of MORAY. It seems to have been fought on the lands of Newton and Auchencroch, SW of Inchbare, where many relics of such an event have turned up from time to time; and some authorities hold that from it is derived the name of the parish—*Strathcathrach*, 'the strath of the battle of the king.' The second event was in 1296, when, at Stracathro church, John Baliol did homage to Edward I., and was deprived of his royal position; and the third was in 1452, when at Huntly Hill, on the Hill of Stracathro, 'Earl Beattie,' or the 'Tiger Earl of Crawford,' one of the 'Banded Earls,' was, with his 'kine and friends,' defeated by the loyal clans of the NE of Scotland, under the command of the Earl of Huntly. The incident is generally known as the Battle of Brechin, and Earl Beattie was so enraged at his defeat, which was caused by the treachery of one of his own followers, that he declared if he had only gained the victory he 'wad have been content to hang seven years in hell by the breers of the e'en.' A large boulder on the top of Huntly Hill is said to mark the spot where Huntly's standard was planted. There are hamlets at INCHBARE and Newtonmill, and the mansions are Auchencroch House and Stracathro House. The latter is a good Grecian building erected about 1840 by the then owner of the estate, Mr Alexander Cruickshank, whose trustees sold the property in 1848 to Sir James Campbell (Lord Provost of Glasgow, 1840-48). His son, Jas. Alex. Campbell, Esq., M.P., LL.D. (b. 1825; suc. 1876), is present proprietor. The E end of the parish is traversed by the main road through the Valley of Strathmore from Brechin to Stonehaven, and there are a number of good district roads, but the nearest railway stations are at CRAIGO and BRECHIN. The proposed Brechin and Edzell railway will cross the parish from south to north.

The parish, which comprehends the ancient parishes of Stracathro and Dunlappie (the latter being the north-western part), united in 1618, is in the presbytery of Brechin and the synod of Angus and Mearns. Before the Reformation Stracathro was the vicarage of the Chanter of Brechin. A well (now dry) near the church was known as Brawl's or Strule's Well, so that the old church was probably dedicated to St Rula. The present parish church, a plain building erected in 1791 and repaired in 1849, has 360 sittings. Under the school board, Stracathro school, with accommodation for 145 pupils, had, in 1893, an attendance of 77, and a grant of £80, 19s. 6d. The principal proprietor is Dr J. A. Campbell, M.P., of Stracathro. Valuation (1885) £6569, 2s., (1893) £5140, 1s. Pop. (1801) 593, (1831) 564, (1861) 546, (1871) 503, (1881) 487, (1891) 505, of whom 226 were females.—*Ord. Sur.*, sh. 57, 1868.

Strachan, a hamlet and a parish of NW Kincardineshire. The hamlet stands, 260 feet above sea-level, on the left bank of the Water of Fegh, 3½ miles SSW of Banchory and 2½ WSW of Aberdeen, under the former of which it has a post office.

The parish, much the largest in the county, is bounded N and NE by Banchory-Ternan, E by Durris, SE by Glenbervie, Fordoun, and Fettercairn, SW by Edzell and Lochlee in Forfarshire, and NW by Birse in Aberdeenshire. Its utmost length, from NNE to SSW, is

13 miles; its utmost breadth is $7\frac{3}{4}$ miles; and its area is $65\frac{1}{2}$ square miles or 41,885 $\frac{1}{2}$ acres, of which 213 $\frac{1}{2}$ are water. Issuing from tiny Loch Tennet (1650 feet above sea-level), on the NW slope of Mount Battock, the Water of A'an, A'en, or Avon runs $8\frac{1}{2}$ miles north-eastward along the Aberdeenshire border, till it falls into the Water of Feugh, which passes off into Banchory at a point $7\frac{1}{2}$ furlongs above its influx to the river Dee. The Water of Dye, rising at an altitude of 2000 feet on the SE slope of Mount Battock, winds $14\frac{1}{2}$ miles eastward and north-by-eastward to the Feugh; and the DEE curves $3\frac{1}{2}$ miles eastward along all the northern boundary. The surface declines beside the Dee to 195 feet above sea-level, and rises thence to 1104 feet at the Hill of Goanch, 1747 at Kerloch, 1444 at CLACHNABEN or Klochaben, 1488 at CAIRNIEMOUNT, and 2558 at Mount Bartock, near the meeting-point of Kincardine, Forfar, and Aberdeen shires. 'The main portion of Strachan consists of high hills and moors,' writes Mr James Macdonald in *Trans. Highl. and Ag. Soc.* (1881). 'The arable area is very small, and is made up largely by a narrow irregular fringe along both sides of the Feugh and its affluent, the Water of Dye. Near Strachan hamlet on the Feugh, there is a considerable stretch of really good arable land, mostly black free fertile loam. The principal estates in this parish are those of Glendye, Strachan, and Blackhall. On the former there is a small strip of arable land along the course of the Dye, mostly between Bingleburn and Glendye Lodge, a short distance above the bridge of Dye. On the Strachan estate there are a few good arable farms, the largest, Bowbutts, extending to 180 acres. The soil is light black loam, on gravel or rock. . . . Very little wheat is grown in this district, but oats and barley of heavy weights and very fine quality are raised. Harvesting begins, as a rule, early in September. A good many cattle, mostly crosses between the polled and shorthorn breeds, are reared in the parish. Most of the land has been drained since 1850 by Government, the proprietors, or the tenants; while, besides great improvement in the way of building and fencing, a large extent of new land has been reclaimed, chiefly from moor and moss. Rent varies from 20s. to 28s. per acre. On the Blackhall estate there are also some very good arable farms, managed in a manner similar to the system prevailing on the Strachan property. One of the largest and best managed holdings is the combined farms of Letterbeg and Bucharn. The extent is 245 acres arable and 60 of natural pasture, the rental being £240, 11s. The soil is mostly black friable loam. A portion of the farm is put under sheep, and is broken up occasionally. The other portion is worked in five shifts.' The predominant rock is granite. Barely one-twenty-fifth of the entire area is in tillage; nearly as much is under wood, plantations mostly of larch and Scotch firs in the northern district; and all the remainder is either pastoral or waste. In the north of the parish, along the Dee, strawberries are extensively grown. On 21 Sept. 1861, the Queen, after leaving FETTERCAIRN, 'came to a very long hill, called the Cairniemount, whence there is a very fine view, but which was entirely obscured by a heavy driving mist. We walked up part of it, and then for a little while Alice and I sat alone in the carriage. We next came to the Spittal Bridge, a curious high bridge, with the Dye Water to the left, and the Spittal Burn to the right. Sir T. Gladstone's shooting-place is close to the Bridge of Dye—where we changed carriages again, re-entering the double dog-cart—Albert and I inside, and Louise sitting behind. We went up a hill again and saw Mount Battock. You then come to an open country, with an extensive view towards Aberdeen, and to a very deep, rough ford, where you pass the Feugh at a place called White Stones. It is very pretty, and a fine glen with wood.' Dr Thomas Reid (1710-96), the distinguished moral philosopher, was the son of a minister of Strachan; and the great Covenanter, Andrew Cant (*circa* 1590-1664), was one of the Cants of Glendye. The modern name, Strachan, is simply a corruption of Stratha'en ('Valley of the A'en'),

and is popularly pronounced Straan. This parish is in the presbytery of Kincardine O'Neil and the synod of Aberdeen; the living is worth £167. The parish church, at the hamlet, was built in 1867, and contains 340 sittings. There is also a Free church; and two public schools, Glendye and Strachan, with respective accommodation for 48 and 145 children, had (1893) an average attendance of 13 and 66, and grants of £23, 6s. and £66, 11s. 6d. Valuation (1885) £5782, (1893) £5917, 16s. Pop. (1801) 730, (1831) 1039, (1861) 870, (1871) 795, (1881) 694, (1891) 655.—*Ord. Sur.* sh. 66, 1871.

Strachur and Stralachlan, a parish on the W side of Cowal district, Argyllshire, containing Strachur village, 1 mile SE of Creggan's steamboat pier on Loch Fyne, 5 miles S by E of Inveraray, $4\frac{1}{2}$ NNW of Locheckhead, and 19 NNW of Dunoon. The village has a post office, with money order, savings bank, and telegraph departments, a free library, a good hotel, and cattle fairs on the last Saturday of May and the first Tuesday of October. The present parish comprises the ancient parishes of Kilmaglass or Strachur to the NE and Kilmorrie or Stralachlan to the SW, which were disjoined from Dunoon, Lochgoilhead, and Inverchaolain in 1650. It is bounded NE and E by Lochgoilhead, S by Kilmun, Kilmoran, and Kilfinan, and NW by Loch Fyne. Its utmost length, from NE to SW, is $17\frac{1}{2}$ miles; its breadth varies between $1\frac{1}{2}$ and 7 miles; and its area is $62\frac{1}{2}$ square miles or 39,088 $\frac{1}{2}$ acres, of which $24,542\frac{1}{2}$ belong to Strachur and $14,541$ to Stralachlan, whilst $366\frac{1}{2}$ are foreshore and 440 water. The coast, extending $18\frac{1}{2}$ miles south-westward along the eastern shore of Loch Fyne, from the neighbourhood of St CATHERINES Ferry to Largimore, rises rapidly from the water's edge, which, except for 3 miles near Stralachlan church, is closely skirted by the road to Otter Ferry. It is slightly indented by Strachur, Newton, and Lachlan Bays, and between the two last projects its sole conspicuous headland, Barr nan Damh, 627 feet high. The river CUR, formed by two head-streams at an altitude of 380 feet, runs $6\frac{1}{2}$ miles south-westward and south-eastward to the head of fresh-water Loch Eck ($\frac{1}{2}$ miles $\times$ 3 furl.; 67 feet), whose upper $2\frac{1}{2}$ miles belong to Strachur. The surface of Strachur is hilly everywhere, in places mountainous, chief elevations from N to S being Creag Dubh (1559 feet), Creagan an Eich (1068), Meall Reamhar (1364), *BEN LOCHAIN (2306), Carnach Mor (2048), *BEN BHEULA (2557), Ben Dubhain (2090), *Sgor Coimhich (2148), and Ben Bheag (2029), where asterisks mark those summits that culminate on the eastern border. In Stralachlan the highest point is Cruach nan Capull (1576 feet). Metamorphic rocks, chiefly mica slate and clay slate, predominate; limestone has been worked; and there are indications of coal and ironstone. The low grounds are disposed in two vales which bear the distinctive names of Strachur Strath and Strath-Lachlan. The former and larger, at the head of Loch Eck, consists of good alluvial soil, particularly along the banks of the Cur. 'Any kind of crop might be raised in such soil. There is good meadow ground for hay, but the river often overflows its banks in summer and autumn, doing much harm to the crops of hay and corn. Like many other rivers fed by mountain streams, it is very difficult to provide any remedy against the overflowing of its banks or the occasional changing of its course.' The hills afford excellent pasture for sheep and black cattle, and, though once heathy, are now to a great extent covered with rich soft verdure. Barely one-thirtieth of the entire area is in tillage; nearly one-twentieth is under wood; and all the remainder is pastoral or waste. Strachur Park, between Strachur village and Creggan, is the property of John Campbell, Esq. (b. 1845; suc. 1874). Another mansion, noticed separately, is CASTLE-LACHLAN. This parish is in the presbytery of Dunoon and the synod of Argyll; the living is worth £200. Strachur church, at the village, was built in 1789, and contains about 400 sittings; and Stralachlan church, 6 miles to the SW, was built in 1792, and contains 150 sittings. There is a Free church of Strachur; and three public schools—Poll, Strachur, and

Stralachlan—with respective accommodation for 72, 80, and 76 children, had (1893) an average attendance of 26, 62, and 80, and grants of £47, 3s., £95, 1s. 6d., and £49, 7s. 6d. Pop. (1801) 1079, (1831) 1204, (1841) 1086, (1861) 872, (1871) 867, (1881) 932, (1891) 748, of whom 477 were Gaelic-speaking.—*Ord. Sur.*, shs. 37, 29, 1876-78.

Strae. See GLENSTRAE and GLENORCHY.

Strageath Camp. See MUTHILL.

Straiton, a village and a large parish of Carrick, S Ayrshire. The village, towards the NW of the parish, stands, 380 feet above sea-level, near the right bank of the Water of Girvan, 6½ miles W by S of Dalmellington and 7 ESE of Maybole, under which it has a post office.

The parish, containing also most of PATNA village, is bounded NE by Dalrymple and Dalmellington, SE and S by Carsphairn and Minnigaff in Kirkcudbrightshire, SW by Barr, W by Dailly and Kirkmichael, and NW by Kirkmichael. Its utmost length, from N by W to S by E, is 17½ miles; its breadth varies between 1½ and 9 miles; and its area is 81½ square miles or 52,249½ acres, of which 2448½ are water. Desolate Loch ENOCH (6½ × 4½ furl.; 1650 feet), at the southern extremity of the parish, sends off Eglin and Gala Lanes 6½ miles north-north-eastward to the head of Loch DOON (5½ miles × 6½ furl.; 680 feet), whose western shore belongs wholly to Straiton, whilst the eastern is divided between Carsphairn and DALMELLINGTON, and, issuing from whose foot, the river DOON winds 12 miles north-westward along all the north-eastern border, till, a little below Carnochan, it passes off from Straiton. (See NESS GLEN.) From a point 7 furlongs below its source in Barr parish, the Water of GIRVAN winds 7½ miles north-by-eastward, 8½ miles north-westward, and 6½ furlongs northward along the Kirkmichael boundary to within 2½ furlongs of Cloncaird Castle. It thus has a total course here of nearly 17 miles, though the point where it first touches and that where it quits the parish are only 10 miles distant as the crow flies; and early in this course it traverses four lakes, of which Loch Bradan (1 × ½ mile; 900 feet) is much the largest. The STINCHAR, early in its course, runs 3½ miles north-north-westward and west-south-westward along or close to the Barr boundary, on which lies also Linfern Loch (4½ × 3 furl.; 980 feet). Of eight other lakes and lakelets the chief are Lochs Macaterick (1½ mile × 4½ furl.; 990 feet), RICAWR (6 × 5 furl.; 960 feet), DER-CLACH (4½ × 1½ furl.; 870 feet), and FINLAS (1½ mile × 2½ furl.; 840 feet), sending off their superfluence to Loch Doon; and triangular Loch Spallander (3 × 2 furl.; 695 feet), on the Kirkmichael boundary. Sinking along the Doon to 295, and along the Girvan to 300, feet above sea-level, the surface thence rises to 1005 feet at Keirs Hill, 1163 at Turgeny, 1160 at CRAIGENGOWER, 929 at BENAN Hill, 1252 at the Big Hill of Glenmount, 1716 at Craiglee, and 2270 at Mullwharchar. The valleys of the Girvan and the Doon, and the gentler acclivities of their hill-screens, are under the plough, and tufted with wood; and they offer to the eye some fine landscapes. The rest of the parish is all upland and pastoral; and the greater part of it, from the southern and eastern boundaries inward, is a wilderness of heights, not mountainous, but wild and solitary, with nothing save rocks and heather. The extent of uncultivated land is about eleven times that which owns the dominion of the plough. The rocks exhibit great diversity, and afford wide scope for the study of the geologist. Granite prevails above Loch Doon; greywacke and greywacke slate adjoin the granite; along the Girvan are trap rocks, interspersed with mountain limestone; and rocks of the Carboniferous formation, comprising workable coal, ironstone, and limestone, occur around Patna. The soil of the arable lands is clayey and retentive on the Doon, light and gravelly on the Girvan, and very diversified in other places. The chief antiquities, excepting only some cairns, have been noticed in our article on Loch DOON. Mansions, noticed separately, are BLAIRQUHAN Castle and BEBBETH House; and the chief proprietors are the

Marquis of Ailsa, the Right Hon. Sir James Fergusson, Bart., Sir E. Hunter-Blair, Bart., and A. F. M'Adam, Esq. Giving off a portion to PATNA *quoad sacra* parish, Straiton is in the presbytery of Ayr and the synod of Glasgow and Ayr; the living is worth £332. The parish church, St Cuthbert's, is a plain old building, with an earlier Gothic aisle. It was altered and repaired in 1787 and 1813. Three public schools, Loch Doon, Patna, and Straiton, with respective accommodation for 32, 180, and 110 children, had (1893) an average attendance of 11, 100, and 51, and grants of £23, 17s. 6d., £93, 6s. 6d., and £48, 11s. 6d. Pop. (1801) 1026, (1831) 1377, (1861) 1544, (1871) 1448, (1881) 1241, (1891) 1060, of whom 633 were in the ecclesiastical parish.—*Ord. Sur.*, shs. 14, 8, 1863.

Stralachlan. See STRACHUR.

Stranathro, a fishing-village, with a harbour and a coastguard station, in Fetteresso parish, Kincardineshire, 5 miles NNE of Stonehaven. In geiss rocks to the S are two magnificent natural arches, 80 feet high and 50 wide, which are washed by the sea at high tide.

Stranraer, a town and a parish at the head of Loch Ryan in Wigtownshire. A royal and police burgh, a seat of trade, a seaport, and the capital of the W of Wigtownshire, the town stands on the Portpatrick railway (1861), 7½ miles NE of Portpatrick, 58½ SSW of Ayr, 72½ WSW of Dumfries, and 162½ (by road 128) SW of Edinburgh. It includes a portion called Trades-ton in Inch parish, and portions called Sheuchan and Hillhead in Leswalt parish; is bisected nearly through the middle by a streamlet, which has now been arched over at all points where it comes in view of the public streets; occupies broken ground, with such inequalities of surface as are unfavourable for scenic effect, and even disadvantageous for facile traffic; and, though consisting chiefly of modern streets and possessing a large amount of handsome or elegant architecture, presents very little regularity or tastefulness of arrangement. One street runs with a curvature along the margin of Loch Ryan; another, commencing farther to the E, goes bendingly in somewhat the same direction; a third, beginning at a point opposite the E end of the first and nearly the middle end of the second, goes also in somewhat the same direction; a number of others cross these in various directions; and some clustered rows of houses stand in the outskirts. Entire streets, formed towards the end of the 18th century, contained originally, and more contain now, many houses of a handsome and substantial character; but they were allowed to take any line or curve or bend which caprice or accident might dictate, so that they exhibit scarcely any symmetry or grace in the grouping of their edifices. The old Town-hall, erected in 1855, is now used as a volunteer drill-hall and armoury. The Court House was erected in 1872-73, after designs by Mr Wardrop of Edinburgh, at a cost of £7000. It is a fine Scottish Baronial edifice, two storeys high, with a tower and spire, a court room, town-hall, and police office. The prison was closed in 1882, along with many other local prisons in Scotland, and the building is now used as a private dwelling. All prisoners sentenced at the court here to more than 14 days' imprisonment are now sent to the central prison at Maxwelltown, Dumfries—those to less than 14 days to the local prison at Wigtown. Stranraer or Kennedy's Castle, almost hidden by other buildings, in the centre of the town, is a baronial fortalice founded towards the close of the 15th century. Consisting of whinstone, with corners and lintels of sandstone, it has thick walls and small windows, crow-stepped gables and pepper-box turrets, and in 1682 became the residence of the 'Bloody Claverse,' as sheriff of Galloway. Stranraer parish church is a substantial building of 1841 in the Pointed style, and surmounted by pinnacles. It received extensive improvements in 1894, and contains over 1000 sittings. Sheuchan Established church, a handsome edifice on a lofty eminence, with a conspicuous square bell-tower, was built as a chapel of ease in 1842, and became parochial in 1868. Stranraer Free church is a plain building of the Disruption period; 405

but for the Sheuchan Free Church congregation, a fine new church was opened in August 1884. It is situated in King Street, contains 550 sittings, and cost over £2000. Ivy Place U.P. church was built in 1840, and a handsome new church erected by the West U.P. congregation was opened in October 1884. It is situated in Lewis Street, close to the Court House, contains 500 sittings, and cost about £3000. The Reformed Presbyterian church was built in 1824, the United Original Secession church in 1843, and St Joseph's Roman Catholic church (400 sittings) in 1853. There is also a mission station (St John's) in connection with the Scotch Episcopal Church. The Stranraer Academy, built in 1845 at a cost of £2000, passed, in terms of the Education Act of 1872, to the Burgh School Board, and was burned down at the end of 1894. The Burgh School Board had in 1893 four schools under their charge—the Academy, which had accommodation for 648 pupils; the Sheuchan school, for 302; the elementary school, for 409; and the elementary school No. 2, for 144. In the same year the average attendance in the Sheuchan, the elementary, and the elementary No. 2 schools was respectively 218, 350, and 106, and the Government grants were £190, 15s., £306, 5s., and £22, 12s. St Joseph's Roman Catholic school had accommodation for 72 scholars, an average attendance of 59, and a grant of £55. Stranraer Reformatory (1855) is licensed to contain 100 boys; and the Wigtownshire Combination Poorhouse has accommodation for 352 inmates. Other institutions are a public reading-room, a public library, an Athenæum, an agricultural society, a horticultural society, a joint Local Authority hospital, a cottage hospital, a custom-house, a coastguard station, fire-engine station, apiarian association, the Athenæum library, the Queen's Hall, etc.

The town has a post office, with money order, savings bank, and telegraph departments; a railway station, and a branch railway to the harbour; offices of the British Linen Company, the Clydesdale, the Commercial, the National, and the Union Banks; a gas-work (1840), and half a dozen hotels. A Liberal newspaper, the *Galloway Advertiser and Wigtownshire Free Press* (1843), is published every Thursday. A weekly market is held on Friday; cattle fairs are held on the third Friday of April, May, June, July, August, September, October, and November; horse fairs are held on the Monday before the first Wednesday of January, the Thursday in June before Kelton Hill, and the Monday before the second Thursday of October; and a hiring fair is held on the first Friday of May. Manufactures on any considerable scale are prevented by the want of water-power and the high price of fuel. The employments of the inhabitants are mainly such as are common to towns situated in the centre of agricultural districts. There are several small manufactories, a number of grain mills, a large creamery, and extensive nurseries. The handloom weaving and nail-making trades formerly carried on are now extinct. Some fishing, chiefly for white fish and oysters, is carried on in Loch Ryan; and, during the winter herring fishing on Ballantrae Banks, a large number of boats make Stranraer their headquarters, owing to the excellent harbour accommodation and railway facilities. A large general trade, for the W of Wigtownshire, is conducted in the exchange of country produce for imported goods. The healthiness of the town and its capacity of uniting the facilities of a market with many of the advantages of a country life, have rendered it the adopted home of a considerable number of annuitants. The commerce was so small in 1764 that only two vessels, of 30 or 35 tons each, belonged to the port; and it since has alternately increased and dwindled, the aggregate tonnage belonging to the port being 1732 in 1801, 2684 in 1818, 1481 in 1855, 2969 in 1868, 1373 in 1884, and 1291 in 1893. In 1893, 792 vessels of 171,708 tons entered the port, and 789 of 171,557 tons cleared. The harbour, large and commodious, affords excellent accommodation to all classes of vessels. It consists of a breastwork and a west and east pier. From the latter pier, which is

connected with the railway by the harbour branch, the steamers ply to and from Larne in Ireland once daily in winter and twice daily in summer by what is known as the 'short sea route' (39 miles). In order to accommodate the greatly increased traffic by this route, the pier in 1894-95 was widened and lengthened, and a new station, with waiting-rooms, etc., provided. There are spacious platforms on both sides of the station, with a connecting overhead bridge. The cost of the improvements was about £30,000. A steamer also sails twice weekly to Glasgow, and another fortnightly to Port William, Isle of Whithorn, Drumore, and Liverpool. The principal import is coal; and the exports include shoes, leather, cheese, grain, and miscellaneous farm produce. Sir James Caird, K.C.B., F.R.S., of CASSEN-CARRIE, the agricultural reformer (1816-92), was a native; and North-West Castle was the residence of the famous Arctic explorer, Sir John Ross, K.C.B. (1777-1856), whose father was minister of Inch.

The town, which rose up around the castle and a pre-Reformation chapel, was created a burgh of barony in 1596, and a royal burgh in 1617. It is a police burgh,



Seal of Stranraer.

and is governed by a provost, 2 bailies, a dean of guild, a treasurer, and 13 councillors. It formerly united with Wigtown, Whithorn, and New Galloway in sending a member to parliament; but the Redistribution Bill of 1885 disfranchised the Wigtown burghs, and merged their representation in the respective counties. The sheriff court for the western division of the county is held on every Thursday during session; a sheriff small debt court is held on every alternate Thursday during session; and a justice of peace small debt court is held on the first Monday of every month. Corporation revenue (1833) £225, (1865) £272, (1884) £338, (1893) £338. Municipal constituency (1893) 1035. Valuation (1885) £22,151, (1893) £22,337. Pop. (1841) 4889, (1861) 6273, (1871) 5977, (1881) 6415, (1891) 6193, of whom 3325 were females, 6171 were in the police burgh, and 3158 in Stranraer ecclesiastical parish.

The parish of Stranraer, coextensive with the royal burgh, was formed out of Inch in 1628. It is bounded by Loch Ryan, Inch, and Leswalt; and comprises 55½ acres of land, and 35½ acres of foreshore. Part is held in burgage; part belongs to the Earl of Stair, and is let in leases of 99 and 999 years; and part is subleased by Agnew of Sheuchan. The Rev. John Livingstone (1603-72), a Covenanting divine, was minister from 1638 to 1648. Stranraer is the seat of a presbytery in the synod of Galloway; the living is worth £380; whilst that of Sheuchan, with 1420 inhabitants, is £197.

The presbytery of Stranraer comprehends the *quoad civilia* parishes of Ballantrae, Colmonell, Inch, Kirkcolm, Kirkmaiden, Leswalt, New Luce, Old Luce, Portpatrick, Stoneykirk, and Stranraer; the *quoad sacra* parishes of Arnshean, Glenapp, Lochryan, and Sheuchan; and a chapel of ease at Ardwell. The Free Church also has a presbytery of Stranraer, with churches at Cairnryan, Glenluc, Inch, Kirkcolm, Kirkmaiden, Leswalt, Portpatrick, Sheuchan, Stoneykirk, and Stranraer, and a preaching station at New Luce.—*Ord. Sur.*, sh. 3, 1856.

Strath, a parish in the Isle of Skye, Inverness-shire, containing the villages of BROADFORD and KYLE-AKIN, and including the islands of SCALPAY, PABBA, and LONGA. It is bounded E and SE by Sleat, W by Bracadale, NW by Portree, and on all other sides by the sea. Its utmost length, from E by N to W by S, is 19½ miles; its breadth varies between 3½ and 10½ miles; and its area is 116 square miles. In 1891 an exchange of territory was effected by the Boundary Commissioners between this parish and that of Sleat,

STRATHAAN

in order to connect the latter parish with its detached part at Kyle-Rhea. The northern portion of this detached part was given to Strath, while at the same time a portion of Strath was given to Sleat so as to connect the remainder of the detached part with the main portion of the parish. The northern coast is indented by Loch AINORT at the Portree boundary, BROADFORD Bay, and Loch na Beiste; the southern by Loch EISHART at the Sleat boundary, Loch SLAPIN, and Loch SCAVAIG at the Bracadale boundary. Of eighteen fresh-water lakes the largest and most interesting is Loch CORUIK, which, lying on the Bracadale border, is $114\frac{1}{2}$ acres in extent; whilst of several streams the largest is the Sligachan. The surface is everywhere hilly or grandly mountainous, the chief elevations being Beinn na Caillich (2396 feet), Sgiur na Coinnich (2401), and Beinn na Seamraig (1839) on the Sleat boundary; a second Beinn na Caillich (2403) and Beinn Dearg (2923), to the W of Broadford; and Marsco (2414), BLABHEIN or Blaven (3042), and Ben Meabost (1126), still farther to the W. According to the Ordnance Survey, 62,040 acres are moorland, leaving less than one-seventh of the entire land area for arable grounds and woodlands. Where limestone abounds the pasture is rich and luxuriant; but where the primitive rocks occur, they are of a kind to yield little soil, and maintain a scanty and inferior herbage. The soil of the arable grounds is partly clay, partly black loam, and partly reclaimed moss. Sandstone, chiefly of a light-blue colour, has been quarried for building, and limestone worked both as a manure and as a coarse yet ornamental marble. Remains of pre-Reformation chapels exist at Ashig, Kilbride, and Kilmorie; and ruins of seven circular towers, each in sight of the next, and all surmounting rocks, stand in the W. From the southernmost commences a series in Sleat, and from these again a series on the opposite shore of Arisaig. A number of tumuli in the E are traditionally said to mark the scene of a conflict with the Danes. A cave in the N is an object of interest to the curious as having, during several nights in 1746, afforded shelter to Prince Charles Edward. A rocking-stone, consisting of a prodigious block of granite, and movable by a single finger, stands on the glebe. Lord Macdonald owns a large portion of the land. Strath is in the presbytery of Skye and the synod of Glenelg; the living is worth £289. The parish church was built at Broadford in 1841, and contains 900 sittings. There are also a Free church and a Baptist chapel at Broadford, and chapels of ease at Kyle-Akin and Breakish. Seven public schools, with total accommodation for 450 children, had (1893) an average attendance of 353, and grants amounting to £465, 3s. Pop. (1801) 1748, (1841) 3150, (1861) 2664, (1871) 2562, (1881) 2616, (1891) 2399, of whom 2172 were Gaelic-speaking.

Strathaan. See STRACHAN.

Strathalladale. See HALLADALE and REAY.

Strathallan Castle, the seat of Viscount Strathallan, in Blackford parish, Perthshire, near the right bank of Machany Water, 3 miles NNW of Auchterarder. Standing rather high, amid a perfect sea of noble woods, it is a fine and substantial edifice, in which the Baronial style predominates. The exterior is comparatively modern, but the centre is of some antiquity. James, second son of the second Lord Drummond, in 1609 was raised to the peerage as Baron Maderty; and William, the fourth Lord Maderty, in 1686 was further ennobled as Viscount Strathallan. William, fourth Viscount, a zealous Jacobite, fell at Culloden (1746); and the forfeited titles were not restored till 1824, when they were granted to his grandson, James Andrew Drummond, M.P., whose great-grandson, William Huntly, ninth Viscount (b. 1871; suc. 1893), is present proprietor and heir-presumptive to the Scottish titles of the Earl of Perth.—*Ord. Sur.*, sh. 47, 1869. See chap. xxvi. of T. Hunter's *Woods and Estates of Perthshire* (1833).

Strathaven, a town in AVONDALE parish, Lanarkshire, $9\frac{1}{2}$ miles S by W of Hamilton, 16 SSE of Glasgow, and $8\frac{3}{4}$ (by rail) S by E of High Blantyre station, as terminus of a branch line of the Caledonian. It stands, 600 feet

STRATHBLANE

above sea-level, on both banks of Powmillon Burn, 1 mile above its influx to Avon Water, and is a place of some antiquity. Seemingly it grew up under the protection of a strong castle built by an illegitimate grandson of the second Duke of Albany, Andrew Stewart, who in 1456 obtained the barony of Avondale, and next year was created Lord Avondale. The ruins of the castle still crown a rocky eminence by the side of Powmillon Burn, and form a fine feature in the landscape. In the days of its strength it was probably quite engirt by the stream, and approached by a drawbridge. During the Commonwealth it was temporarily inhabited by the Duchess of Hamilton, commonly called the Good Duchess; but after her death in 1717 it seems to have fallen rapidly into decay. The town, which suffered severely by a great fire in 1844, in its older parts wears an antique appearance, the houses being much huddled together, and the streets narrow and irregular; but the more modern parts contain some excellent houses, and comprise fine wide streets. A number of neat small villas also stand in the neighbourhood. Strathaven has a post office, with money order, savings bank, and telegraph departments, branches of the Bank of Scotland, the Royal, and the Union Banks, a gaswork, a public reading-room and library, a Gospel hall, assembly rooms, a Freemasons' lodge, a Good Templars' lodge, a Foresters' court, a mission hall, bowling and lawn-tennis greens, a cemetery, and a monument to Wilson, executed at Glasgow in connection with the Chartist movement. Steps were being taken in 1895 towards the erection of a town-hall. There is a weekly Thursday market, and fairs are held on the first Thursday in Jan., March, April, and Nov., the last Thursday in June, and the Thursday after Lanark October Tryst. Weaving is the staple industry. In 1893 the Glengavel water scheme was begun by the District Committee of the County Council. From a reservoir near High Plewlands a 21-inch pipe leads to filters on the high ground above Glassford railway station, at an elevation sufficient to supply the town and nearly the whole Middle Ward of the county by gravitation. Avondale parish church, built in 1772, contains 800 sittings. It was thoroughly renovated in 1879, and was adorned with a heraldic stained-glass window by the Duke of Hamilton, and with several beautiful 'in memoriam' windows by leading parishioners. East Strathaven chapel of ease was erected in 1837, and there is a Free church, dating from Disruption times, but replaced in 1884 by a neat edifice seating 470. There are also three U.P. churches—First (1787; 600 sittings), East (1820; renovated 1877; 800), and West (1835; 800); and St Patrick's Roman Catholic church (1863; 150). Crosshill and Ballgreen public schools, with respective accommodation for 421 and 302 children, had (1893) an average attendance of 261 and 286, and grants of £311, 10s. and £304, 11s. 10d. The town was erected into a burgh of barony in 1450. Pop. (1871) 3645, (1881) 3812, (1891) 3478, of whom 1876 were females. Houses (1891) inhabited 493, vacant 39, building 3.—*Ord. Sur.*, sh. 23, 1865. See M. Gebbie's *Sketches of the Town and Parish of Avondale* (1880).

Strathblane, a village and a parish of SW Stirlingshire. The village, standing on the river Blane, 265 feet above sea-level, by road is $4\frac{1}{2}$ miles N by E of Milngavie and $11\frac{1}{2}$ N by W of Glasgow, under which it has a post office; whilst its station on the Blane Valley section of the North British is 13 miles S of Buckleyvie, $4\frac{1}{2}$ W by N of Lennoxtown, and $15\frac{1}{2}$ N by W of Glasgow.

The parish, containing also the larger village of Blane-field, with print-works and another station, is bounded E by Campsie, SE by Baldernock, S and SW by New Kilpatrick in Dumbartonshire, and W and N by Killearn. Its utmost length, from N to S, is $4\frac{3}{4}$ miles; its utmost breadth, from E to W, is $4\frac{3}{4}$ miles; and its area is $9217\frac{1}{2}$ acres, of which $149\frac{1}{2}$ are water. The BLANE, rising on the western side of Earl's Seat, in the NE corner of the parish, at an altitude of 1650 feet above sea-level, runs first, as BALLAGAN Burn, $2\frac{1}{2}$ miles south-by-eastward, and next $5\frac{1}{2}$ miles north-westward, for the last $\frac{3}{4}$ mile along the north-western border. It thus has a total

course here of $7\frac{7}{8}$ miles, though the distance from its source to the point where it quits the parish is but $2\frac{1}{4}$ miles as the crow flies. ALLANER Water flows $2\frac{1}{4}$ miles south-south-eastward along all the Dumbartonshire border; and the largest of nine sheets of water in the southern half of the parish, Loch Ardingning and Craighall Loch, have each a maximum length and breadth of $3\frac{3}{4}$ and $1\frac{1}{2}$ furlongs. The Loch Katrine aqueducts of the GLASGOW Waterworks traverse the parish for a distance of $4\frac{1}{2}$ miles. Along the Blane, in the NW, the surface declines to 100 feet above sea-level; and thence it rises to 634 feet at the western boundary near Auchengillan, 600 near Carbeth, 566 near Loch Ardingning, 1624 at the Strathblane Hills, 1664 at DUMBRECK on the Campsie boundary, 1401 at Dumgoyne, and 1894 at EARL'S SEAT, which culminates just on the meeting-point of Strathblane, Killearn, Fintry, and Campsie parishes. The Blane's valley, which gives the parish the name of Strathblane, forms a cut or depression across the Lennox Hills, dividing the Campsie Fells on the E from the Kilpatrick Hills on the W. Commencing with a width of less than 1 mile, and expanding to one of nearly 2 miles, it exhibits, from stand-points at its head, a very beautiful view. On the NE side it is screened at one point by a basaltic colonnade, 240 yards long and 30 feet high. The hills on this side are bold, lofty, and picturesque; those on the SW side are softly outlined, partially wooded, and comparatively low; and the low grounds display an exquisite assemblage of mansions, lakes, woods, and luxuriant cornfields. Along it runs the Blane Valley section of the North British railway, with stations at Strathblane and Blanefield. The prevailing rock of the hills is trap, and that of the low grounds Old Red Sandstone. The soil is sandy in the upper parts of the valley, and clayey in the lower. About 3680 acres are in tillage; 2000 acres are under wood; and the rest is mostly hill-pasture. MUGDOCK Castle is noticed separately, as also are the mansions of BALLAGAN, CARBETH-GUTHRIE, CRAIGEND Castle, and DUNTREATH Castle. Strathblane is in the presbytery of Dumbarton and the synod of Glasgow and Ayr; the living is worth £219. The parish church is a Gothic edifice of 1803, containing 450 sittings. There is also a Free church and St Kessog's Roman Catholic church (238 sittings), erected in 1893 at a cost of £1200; and a public school, with accommodation for 243 children, had (1893) an average attendance of 158, and a grant of £158, 15s. 6d. Valuation (1885) £9488, (1892) £9318, plus £10,091 for railway, etc. Pop. (1801) 784, (1831) 1033, (1861) 1388, (1871) 1235, (1881) 1343, (1891) 1671. See Guthrie Smith's *Parish of Strathblane* (1886).—*Ord. Surv.*, sh. 30, 1866.

Strathbogie, the vale of the river BOGIE on the NW border of Aberdeenshire, and a presbytery partly also in Banffshire. The presbytery, in the synod of Moray, comprehends the *quoad civilia* parishes of Bellie, Botriphnie, Cairney, Gartly, Glass, Grange, Huntly, Keith, Marnoch, Mortlach, Rhynie, and Rothiemay, and the *quoad sacra* parish of Newmill. It figured prominently in the events precurrent to the formation of the Free Church in 1843. The Free Church also has a presbytery of Strathbogie, with churches at Bellie, Botriphnie, Cairney, Gartly, Glass, Grange, Huntly, Keith, New Marnoch, and Rothiemay. See Dr John Stuart's *Extracts from the Presbytery Book of Strathbogie* (Spalding Club, 1843).

Strathbungo. See GLASGOW.

Strathdon, a parish of W Aberdeenshire, whose church stands, 952 feet above sea-level, on the right bank of the Don, opposite the influx of the Water of Nocht, $13\frac{3}{4}$ miles N by W of Ballater, $19\frac{1}{2}$ W by S of Alford, $4\frac{1}{2}$ W by N of Aberdeen, $17\frac{1}{2}$ SW of Rhynie, and $21\frac{1}{2}$ SW of Gartly station. With both Gartly and Alford stations on the Great North of Scotland system, Strathdon communicates daily by coach. There are a branch of the Town and County Bank, a post office under Aberdeen, with money order, savings bank, and telegraph departments, and fairs on the second Fridays of February, May, and November, the last Friday of

March, the fourth Friday of August, and the last Friday of September. The parish, anciently called Invernochy, is bounded NE by Glenbucket, E by Towie and Logie-Coldstone, S by Glenmuick and Crathie-Braemar, and W and NW by Kirkmichael and Inverven in Banffshire. Its utmost length, from E to W, is $13\frac{1}{2}$ miles; and its breadth varies between $1\frac{1}{2}$ and $10\frac{1}{2}$ miles. The GLENKINDIE detached part of the parish, comprising $3557\frac{1}{2}$ acres, was in 1891 transferred by the Boundary Commissioners to the parish of Towie in order to connect that parish with its Glencue detached part. The Glenennan detached portion of Tarland parish, however, comprising $8293\frac{3}{4}$ acres, and so much of the Deskray detached portion of the same parish as lay on the left bank of the river Deskray, were transferred to the parish of Strathdon. The troutful Don, rising close to the Banffshire border at an altitude of 1980 feet above sea-level, winds $23\frac{3}{8}$ miles east-north-eastward through the interior of the parish and along its north-western boundary, until, near Glenbucket Castle, it leaves the parish. The chief of its many Strathdon affluents are the Water of NOCHTY, formed by two head-streams at an altitude of 1263 feet, and running $4\frac{1}{2}$ miles south-eastward; and DESKRY Water, rising at an altitude of 1800 feet, and over the first $4\frac{1}{2}$ miles of its north-north-easterly course tracing all the boundary with Logie-Coldstone, over the last $2\frac{1}{2}$ furlongs part of that with Towie. The surface sinks in the extreme E, where the Don passes off from the parish, to 805 feet above the sea; and chief elevations to the N of the river, as one goes up the valley, are the Hill of Cummerton or Lonach (1682 feet), *Breach Hill (1825), the *Sochach (2356), *Carn Mor (2636), *Geal Charn (2207), and *Carn Ealasaid (2600); to the S, Craig of Bunnasach (1742), Mullachdubh (2129), *Meikle Sgroileach (2432), *Carn a' Bhacain (2442), and *Brown Cow Hill (2721), where asterisks mark those summits that culminate on the confines of the parish. The arable land, which lies all in the glens, most of it in that of the Don, consists of considerable haughs, belts of hanging plain, and skirts of pastoral heights; and it possesses in general a light, sharp, and somewhat fertile soil. Hill ranges of considerable height and breadth flank the glens, and render the general aspect of the parish Highland. The hills are prevalently heath-clad; and in their loftier altitudes are covered with a black spongy soil, inclined to moss; yet in many parts they form good sheep-walks, and in most they abound with game. About one-fifteenth of the entire area is in tillage, fully 5000 acres are under plantations, and the rest is either pastoral or waste. Syenite, limestone, and coarse slate abound, and the limestone has been largely worked. The chief antiquities are noticed under COLQUHONY, CORGARFF, and DOUNE. Mansions, also noticed separately, are ACHERNACH and CASTLE-NEWE. Since 1874 giving off its western portion to CORGARFF *quoad sacra* parish, Strathdon is in the presbytery of Alford and the synod of Aberdeen; the living is worth £251. The parish church, built in 1853, is a good Gothic edifice, with a lofty spire and 600 sittings. Upwards of 30 handsome marble tablets adorn the walls of the interior, and produce a most pleasing and striking effect. Six schools—Corgarf public, Forbeston female public, Knocklea public, Strathdon public, Tillyduke public, and Ardler—with respective accommodation for 58, 50, 40, 95, 74, and 57 children, had (1893) an average attendance of 39, 43, 27, 42, 29, and 18, and grants of £59, 4s., £41, 2s., £34, 8s., £41, £37, 16s., and £26, 15s. Pop. (1801) 1854, (1821) 1698, (1841) 1563, (1861) 1459, (1881) 1316, (1891) 1220, of whom 935 were in Strathdon ecclesiastical parish.—*Ord. Surv.*, sh. 75, 1876.

Strathearn, the basin of the river EARN and its tributaries, in Perthshire. It extends about 32 miles from W to E, and has a mean breadth, including its flanking heights, of 6 to 8 miles. Commencing on the E border of Balquhider parish, at the head of Loch Earn, it is grandly Highland around that lake and for the first 3 miles of the river; expands into brilliant strath in the western vicinity of Crieff; and thence, in opulence of lowland beauty, proceeds into merger with Strathitay

at the mouth of the Earn. It forms, as a whole, one of the most exquisite tracts of country in Scotland, replete with every element of beauty, and exhibiting almost perfect specimens of very various styles of scenery. Forming with Monteith the ancient province of Forth-reen, Strathearn was the seat of an ancient Celtic earldom, whose first Earl, Malise, was a witness to the foundation charter of Scone (1115). It formed a stewardry, in the hands of the Earls of Perth, till the abolition of the heritable jurisdictions in 1748; and it gave the title of Duke, in the peerage of Scotland, to His Royal Highness the Duke of Kent, father of Queen Victoria.

Strathendry, an estate, with a handsome Tudor mansion, in Leslie parish, Fife.

Stratherrick, an upland level, separated from the south-eastern shore of Loch Ness, Inverness-shire, by a narrow range of hills running parallel to the loch, to which it sends, through this range, two rivulets, the Foyers and Farigag. Possessing a variety of arable, meadow, and moor land, it has a Free church, a Roman Catholic chapel, and a public school.

Strathgarry House, a mansion in Blair-Athole parish, Perthshire, near the right bank of the Garry, $1\frac{1}{2}$ mile SE of Blair-Athole.

Strathire. See BALQUHIDDER.

Strathkinness. See ST ANDREWS.

Strathlachlan. See STRACHUR and STRATHLACHLAN.

Strathmartine. See MAINS and STRATHMARTINE.

Strathmiglo, a village and a parish of NW Fife. The village, standing, 200 feet above sea-level, on the river Eden or Miglo, has a station upon the Fife and Kinross section of the North British railway, 2 miles WSW of Auchtermuchty, $6\frac{3}{4}$ W of Ladybank Junction, $12\frac{1}{4}$ WSW of Cupar, and $8\frac{1}{2}$ NE of Kinross. Strathmiglo proper, which is a burgh of barony, lies on the left or northern side of the river; on the southern is the modern suburb of Cash Feus; and between, intersected by the river, is a fine level meadow, the Town Green. The burgh consists of one principal street, of rather an antique and picturesque appearance, running parallel to the river, with four or five wynds diverging at right angles, and a lane called the East and West Back Dykes, passing at the head of the gardens of the feus on the N side. The Kirklands are situated on the S side of the principal street, at its eastern extremity; the Templelands are also on the same side of the street, about the middle of the town; and the Stedmoreland Feus are situated at the western extremity on either side of the street. The suburb of Cash Feus forms a street $\frac{1}{2}$ mile long, of well-built tradesmen's houses, also running parallel with the river. The part of the town called Templelands anciently belonged to the Knights-Templars, and afterwards to the Knights of St John of Jerusalem. A castellated mansion, Strathmiglo Castle, which stood on a spot a short distance E of the town, is supposed to have been built in the time of James V., but was removed in 1740 as building material for a steeple in front of the town-house. This steeple is a handsome structure, comprising a square tower, terminating in an open balustrade, and surmounted by an octagonal spire about 80 feet in height. From the front of it projects a defaced sundial, in the shape of a stone pillar; and above are the arms of the Balfours of Burleigh, who acquired the lands of Strathmiglo from the Scotts of Balwearie about the year 1600. Besides a bleachfield, there are manufactories of damasks, diapers, and other linens. Strathmiglo has a post office, with money order, savings bank, and telegraph departments, a branch of the Bank of Scotland, several hotels, a hall accommodating about 200 persons, Young Men's and Young Women's Christian Associations, a horticultural society, a cemetery, an ornithological society, cricket and football clubs, a gasworks, a fair on the last Friday of June, etc. The parish church, built about 1785, was extensively repaired in 1890-91. One Free church dates from Disruption times, another (the North) till 1876 was Reformed Presbyterian. The burgh acquired its rights so early as 1509, but lost those of them which pertained to its government in 1748, and has since that time been under

the public management of a committee annually elected by the feuars. Pop. (1861) 1408, (1871) 1509, (1881) 1283, (1891) 1099, of whom 536 were in Cash Feus, and 648 were females. Houses (1891) occupied 320, vacant 13.

The parish, containing also EDENSHED (or Edentown or Gateside) village, is bounded NE by Auchtermuchty, E and SE by Falkland, S and SW by Portmoak and Orwell in Kinross-shire, and NW and N by Arngask and Abernethy in Perthshire. Its utmost length, from E to W, is $5\frac{1}{2}$ miles; and its utmost breadth, from N to S, 3 miles. The area of the parish was enlarged in 1891 by the Boundary Commissioners, who transferred to Strathmiglo the Nocharrie and Pitlour portions of the parish of Abernethy, which was then placed wholly in Perthshire. Formed at Burnside on the western border by the confluence of Carmore and Beattie Burns, the EDEN or Miglo flows $5\frac{1}{2}$ miles east-north-eastward and eastward, for the last $1\frac{1}{2}$ mile along or close to the Auchtermuchty boundary. Its chief and earliest affluent is the Glen Burn, rising just within Portmoak, between the West Lomond and Bishop Hill, and running $2\frac{3}{4}$ miles north-westward. In the extreme E the surface declines to 150 feet above sea-level, and thence it rises to 898 feet at Pitlour Wood on the NE boundary, 600 near Freeland, 645 near Carmore (skirts of the Ochils these three), 447 at Upper Urquhart, 569 near Lappiemoss, and 1718 at the West LOMOND—the highest point in all the Fife peninsula. The rocks, in some parts trap, in others sandstone, have been quarried for building material. The soil in the N is mainly a fertile friable loam, in the S is light and sandy. About four-fifths of the entire area are in tillage; some 350 acres are under wood; and the rest of the parish is either pastoral or waste. Down to a comparatively recent period there were numbers of cairns and tumuli, so arranged, and in such position, as to have given Strathmiglo a claim, among other places, of having been the scene of the famous Battle of the GRAMPIONS. In the days of the persecution the Covenanters often met in the sequestered vale of the Glen Burn. The principal mansions are Balcanquhal, Edenshead, Pitlour, and Wellfield. Strathmiglo is in the presbytery of Cupar and the synod of Fife; the living is £343 with manse. Two public schools, Gateside and Strathmiglo, with respective accommodation for 107 and 354 children, had (1893) an average attendance of 62 and 180, and grants of £62, 11s. and £192, 13s. 6d. Valuation (1885) £13,380, 6s. 7d., (1893) £12,008, 15s. 8d. Pop. (1801) 1629, (1831) 1940, (1851) 2509, (1861) 2261, (1871) 2267, (1881) 2061, (1891) 1772.—*Ord. Sur.*, sh. 40, 1867.

Strathmore, the far-stretching band of low country which skirts the frontier mountain-rampart of the Highlands, is flanked along the hither side by the Lennox, the Ochil, and the Sidlaw Hills, and extends from the centre of the main body of Dumbartonshire to the German Ocean at Stonehaven. In this large sense it is exceedingly various in breadth, as well as in the features of its scenery; and comprehends part of Stirlingshire, all Strathallan, most part of Strathearn, and all the Howe of Mearns in Kincardineshire. But the strath is more popularly regarded as consisting only of what is flanked by the Sidlaw Hills, and as extending from Methven in Perthshire to a point a little NE of Brechin in Forfarshire; and, in this view, it is somewhat uniform in breadth and feature, and, belonging principally to Forfarshire, has been succinctly described in our notice of that county. This great district is, in the aggregate, remarkably beautiful and fertile; it contains numerous towns, villages, and elegant mansions; and it is the seat of a great and industrious population. See GLAMIS CASTLE and RUTHVEN.

Strathpeffer, a valley, containing a village of the same name, opening off the upper reaches of the Cromarty Firth at Dingwall, in the county of Ross and Cromarty, and extending for about 5 miles westward from that town. The boundary on the N consists of the Heights of Inchvannie, Brae, and Dochearty, outlying slopes of Ben Wyvis, and on the S of the ridge of Drummchat or the Cat's Back, separating Strathpeffer from Brahan

and lower Strathconon. On this ridge is KNOCKFARREL, one of the best known examples of a vitrified fort. The bottom of the hollow, the lowest part of which is only 20 feet above sea-level, has a good rich clay soil passing into loam, and has evidently at no distant period—geologically speaking—formed part of the bed of the Cromarty Firth. It is highly farmed, and the fields are marked off by fine hedgerows, which, with the neighbouring woods, assist in making the strath one of the prettiest vales in the North of Scotland. The soil of the lower hill slopes is a good reddish loam, but higher up it becomes mossy. The valley is now much disfigured near the centre by a huge embankment, which carries the Dingwall and Skye section of the Highland railway system from the S to the N side of the hollow. This was rendered necessary in consequence of opposition to the line passing farther up the S side. The greater portion of the valley belongs to Lady Sibell Mackenzie, eldest daughter of the late Earl of Cromartie, whose mansion is the fine old house of CASTLE-LEOD in the NW. Some of the trees about it are very old and fine. The hill slopes above it are occupied by the crofting community of Auchtermee or Bollsacks, the original holdings in which were granted by Lord Macleod to the veterans of the Highland corps raised on his estate who returned from the great American War. The drainage is carried off by the Peffery or Pheoran, which flows eastward to the Cromarty Firth. Strathpepper has a terminal station on a branch line (1885) of the section of the Highland railway already mentioned, $4\frac{1}{2}$ miles W of Dingwall. It owes its fame to its mineral springs, which, rising from calcareo-bituminous sandstones belonging to the Old Red Sandstone formation, to which they owe their virtues, are strongly impregnated with various salts that make them highly beneficial in digestive and kidney disorders, as well as in cases of rheumatism and skin disease; but the water must be taken under advice. Recent analyses have shown that the Strathpepper waters are the most powerful in Great Britain. The wells, four in number, vary in quality, but on an average a gallon of water may be taken as containing 13·659 cubic inches of sulphuretted hydrogen gas and 107·484 grains of the various salts in solution, this being made up of 52·710 grains of sulphate of soda, 30·686 grains of sulphate of lime, 19·233 grains of chloride of sodium, and 4·855 grains of sulphate of magnesia. There are handsome pump-rooms and baths; and a bowling-green, and walks both in the grounds and all round the neighbourhood, provide for outdoor amusement, while for bad weather and indoor recreations there is a large pavilion. The air is clear and bracing, and the average rainfall is only 28 inches. The late proprietrix, the Duchess of Sutherland, did much to improve the place, good sanitary arrangements having been secured in the strath by complete drainage and waterworks. The water is conducted from the side of Ben Wyvis, a distance of 7 miles. There are several large hotels, and most of the other houses have been erected for the accommodation of visitors during the season, which lasts from the beginning of May to the end of October. Up till about the middle of the 19th century the strath was a marshy valley, occupied by stagnant waters, large reeds, and a few stunted alders. A stone pillar with an eagle—the crest of the Munros—carved on it, is said to mark the site of a clan battle in the latter part of the 15th century, in which the Munros of Foulis were defeated by the Mackenzies of Seaforth; and near it some years earlier (in 1478) another conflict took place, in which the Mackenzies were victorious over a body of the Macdonalds of the Isles. There is a post office, with money order, savings bank, and telegraph departments, a circulating library, meeting-house library, curling and golfing clubs, horticultural and bee-keeping society, and a Highland games association. An Established church was opened at Strathpepper in 1890. There is also a Free church. St Anne's Memorial Church (300 sittings), a mission station in connection with the Scotch Episcopal Church, was erected in 1892 as a memorial to the late duchess, is Decorated

Gothic, and contains some very fine memorial windows. See Dr D. Manson *On the Sulphur and Chalybeate Waters of Strathpepper Spa* (5th ed. 1884), and Dr Fortescue Fox's *Strathpepper Spa* (1889).—*Ord. Sur.*, sh. 83, 1881.

Strathpey. See SPEY and GRANTOWN.

Strathy. See FARR.

Strichen (old forms *Strathelyn* and *Strichney*; Gael. *Strath-d'en*, 'the strath of the river'), a parish containing a small town of the same name in the Buchan district of Aberdeenshire. It is bounded NW by Tyrie, NE by Rathen, E by Lomnay, S by Old Deer, and SW by New Deer. The boundary is formed for $2\frac{1}{2}$ miles on the S by the Ugie, which here separates the parish from Old Deer. Elsewhere it partly follows the courses of small burns, but is mostly artificial. The greatest length, from the extreme E point beyond New Leads to the point on the W where the parishes of Tyrie, Strichen, and New Deer meet beyond Craiggulter, is $6\frac{1}{2}$ miles; the average breadth at right angles to this is about $4\frac{1}{2}$ miles; and the area is now 14,435 acres, of which 23 are water. The area was enlarged in 1891 by the Boundary Commissioners, who transferred to this parish the Auchentum detached portion of Aberdour parish, comprising 1482 acres, and the Technuiry detached portion of Fraserburgh parish, comprising 2747 acres, both of which portions lay on the north border of Strichen. The surface is hilly, and the height above sea-level rises from the centre of the parish towards both the NE and SW. The lowest point (125 feet) is where the Ugie leaves the parish on the SE, and the highest points are 769 feet at MORMOND HILL, 440 at ADZIEL HILL (SSW), and 383 in the woods of Strichen House. Though a considerable amount of land was reclaimed between 1824 and 1855, a large portion of the parish is still peat-moss, rough-grazing, or waste. The soil is, on the whole, poor, though there are patches of good land here and there. The underlying rocks are granite and Lower Silurian beds. The impure limestones in the latter were formerly worked. The drainage of the parish is carried off by the northern branch of the Ugie, which has a course of $2\frac{1}{2}$ miles from NW to SE across the centre of the parish, and small streams flowing to it. The greater part of the parish was originally in Rathen and the rest in Fraserburgh, but a church and family burial aisle having been erected in 1620 by Thomas Fraser,* proprietor of Strichen, the parish was constituted in 1627, and its disjunction confirmed by Act of Parliament in 1633. The great-grandson of this Thomas was the Hon. Alexander Fraser of Strichen (d. 1775) who, under the title of Lord Strichen, was one of the judges of the Court of Session from 1730 till his death, and as such took part in the trial of Isabella Walker, the prototype of Effie Deans, in 1786, and also in the decision of the Douglas Cause in 1768. Lord Strichen's great-grandson, Thomas Alexander (1802-75), succeeded to the Lovat Estates in 1816, and made good his claim to the dormant peerage of Lovat in 1857. He had previously, however, sold the estate of Strichen in 1855 to George Baird (1810-70), one of the Gartsherrie family, whose son, George Alexander Baird (1861-93), known on the turf as Mr Abington, obtained shortly before his death authority from the Court of Session to disentail and sell the estates of Strichen and Stichel. (See STICHEL.) The mansion, Strichen House, near the town, is a three-storey building, measuring 126 by 90 feet, erected in 1821. It is Grecian in style, and has a portico with fluted Doric pillars. The finely wooded grounds, originally laid out by Gilpin, contain a stone circle, and the ruins of an old chapel a little to the W of the house. This is the circle mentioned in Dr Johnson's *Tour*, where he says he and Boswell 'dined at the house of Mr Frazer of Streighton, who showed us in his grounds some stones yet standing of a druidical circle, and, what I began to think more worthy of notice, some forest trees of full growth.' Boswell adds that they went out of their way to see the circle, as Dr Johnson was anxious to inspect an example. Their entertainer was Lord Strichen's son,

* The Frasers of Strichen were a branch of the house of Lovat, through Thomas Fraser of Knockie.

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at one time an officer in the King's Dragoon Guards, and seemingly a somewhat eccentric personage. It was he who founded the village of New Leeds, which was intended to be a rival to the great Yorkshire town of that name, but which never thrived, and is only a poor straggle hamlet. There were to be statutory fairs, and the laird offered a prize of an eight-day clock to the 'drunkest man that should appear' in the first of those markets. This same Captain Fraser erected 'Rob Gibb's Hunting Lodge,' on the W side of Mormond Hill, and also caused the well-known 'White Horse of Mormond' to be cut on the SW slope of the Hill. The stag on the SE slope was cut in 1870. (See MORMOND.) The horse is represented as standing stiffly erect, and measures 162 feet from the point of the nose to the tip of the tail, and 126 feet from hoofs to ears, while the body is 106 feet long and 41 deep. The parish is traversed for $6\frac{1}{2}$ miles from SW to ENE by the Fraserburgh extension of the Forth and Clyde and Buchanan branch of the Great North of Scotland railway system, with stations at the town of Strichen and at MORMOND near the ENE border.

The town of Strichen was originally laid out as the village of Mormond, by Lord Strichen, in 1764, to promote 'the arts and manufactures of this country, and for the accommodation of tradesmen of all denominations, manufacturers, and other industrious people to settle within the same.' It is now a thriving little place, with pretty surroundings, on the NE bank of the Ugie, on flat ground at the SW end of Mormond Hill, and has a railway station $10\frac{1}{2}$ miles SSW of Fraserburgh, $18\frac{1}{2}$ W by N of Peterhead, and $36\frac{1}{2}$ N by W of Aberdeen. The two principal streets meeting at the N end are well-built, and there is a town-hall, Established, Free, Episcopalian, and Roman Catholic churches, a public school (altered and enlarged in 1894), an Episcopalian school, branches of the North of Scotland and the Town and County banks, a post office, with money order, savings bank, insurance, and telegraph departments, a reading-room, an educational trust, a gas company, an agricultural society, a company of rifle volunteers, and three hotels. There are live stock markets on the first Thursday of every month, and hiring fairs on the Wednesdays after the 19th May and the 12th November. The town-house was erected in 1816 at a cost of £2000. The present parish church, to the S of the town, built near the site of the old one in 1799, has 950 sittings. There is a burial-ground to which an addition was made in 1874, but the parishioners long continued to bury at Rathen, and some of the *tych-stanes*, where the bearers rested, may still be seen along the old road, over Mormond Hill. The church bell came from the old building, and has the inscription, '*Henrick Ten Horst me fecit Daventria anno 1633.*' The Free church, occupying a prominent position at the head of one of the principal streets, was erected in 1893, the jubilee year of the building of the first Free church of Strichen in what was known as 'the Bog.' The Episcopalian church, at the west end of the village, an Early English structure with 200 sittings, was built in 1861 and enlarged and consecrated in 1891. The Roman Catholic church, to the W of the town, built in 1854, was, with the priest's house and acroft, reserved for the Church of Rome when the estate was sold to Mr Baird. In the neighbourhood of the town the Ugie is crossed by a railway viaduct and four stone bridges. Of these two are modern—one having replaced an old bridge near the S end of the town—while the others are old, that to the N being a high-backed structure. The second, at Howford, was built in 1777. Pop. of town (1861) 1030, (1871) 1184, (1881) 1204, (1891) 1133, of whom 473 were males and 660 females. Houses (1891) occupied 280, unoccupied 9, and being built 1.

The parish is in the presbytery of Deer and the synod of Aberdeen, and the living is worth £167 a year. Ecclesiastically a portion of the parish is given off to the *quoad sacra* parish of New Pitsligo, and another portion to that of Kininmonth. Besides the churches already mentioned, there is a U.P. church at New Leeds. Under the School Board, Strichen public school,

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at the town, and Teichmuir public school, with accommodation respectively for 285 and 115 pupils, had, in 1893, an attendance of 176 and 43, and grants of £163, 17s. and £33, 16s. The Episcopalian school (All Saints) has accommodation for 160. Pop. (1801) 1520, (1831) 1802, (1861) 2472, (1871) 2318, (1881) 2343, (1891) 2552, of whom 1188 were males and 1364 females, while 1902 were in the ecclesiastical parish.—*Ord. Sur.*, shs. 87, 97, 1876.

Stroma Loch. See KELLIS.

Stroma, an island in the Pentland Firth, included in the county of Caithness, from which it is separated by the Inner Sound. Rising mostly in lofty rocky cliffs, but containing some good land, it measures 7 miles in circumference. A lighthouse at the north point, with dwelling-houses for three keepers, was begun in 1894. (See PENTLAND FIRTH.) Prior to 1894 the island had no landing-place, so that the boats of the fishermen had to be drawn up on the beach every time they came to land. In 1894-95, however, a pier, 170 feet long, was constructed, composed entirely of Portland cement concrete, and set on a ridge of rocks alongside a natural goe or creek. The work was estimated at £800, and of this sum Government gave a grant of £600. There is a post office on the island, and one mail per week is provided by Government on any day suitable for crossing to it. Pop. (1881) 341, (1891) 327.

Strome Ferry, a place in Lochalsh parish, SW Ross and Cromarty, on the southern shore of salt-water Loch Carron (3 furlongs broad here), 53 miles WSW of Dingwall, and the terminus of the Dingwall and Skye railway until the completion of the extension of the line to Kyle-Akin Strait. (See KYLE-AKIN.) It has a post office, with money order, savings bank, and telegraph departments, a steamboat pier, and a good hotel; whilst on the opposite side of the loch, here crossed by the ferry which gives name to the place, are a small inn and the picturesque ruins of Strome Castle, which existed prior to 1472, and was blown up by Kenneth Mackenzie of Kintail in 1602. There is steamboat communication daily all the year round with Skye, Gairloch, and Stornoway, and from July to September twice daily to Skye and Gairloch. A mail coach runs daily from Strome Ferry to Balmacara, where there is a good hotel and steamboat communication with Oban and Portree. An Established church was opened at Strome Ferry in 1889.—*Ord. Sur.*, sh. 81, 1882.

Stromness, a town and a parish in the SW of Pomonah, Orkney. The town, skirting the W side of a beautiful bay, by road is $14\frac{1}{2}$ miles W by S of Kirkwall, and by water 27 miles NNE of Duncansby Head, and 35 NNE of Scrabster Pier, Thurso. With Kirkwall it communicates by public coach and steamer, and with Scrabster by steamer, as also with Leith, Aberdeen, Scalloway, Stornoway, Liverpool, and other seaports. At the beginning of the 18th century it consisted of only half a dozen slated houses and a few scattered huts, the former inhabited by two gentlemen of landed property and two or three small traders, the latter by a few fishermen and mechanics; and it then had only two vessels, each of 30 tons, and both employed in catching cod and ling at Barra, and making an annual voyage to Leith or Norway. Its rising importance, from the visits of the American rice-ships, drew the attention of the burghers of Kirkwall, and brought upon it a persecution whose origin and upshot form an interesting chapter in the history of Scottish burghs. Founding on an obscure act of 1690, which declared that the export or import of native or foreign commodities, with some exceptions, belonged only to freemen inhabiting royal burghs, and on a subsequent act of 1693, which declared that the benefit of trade allowed to royal burghs might be communicated to other places on condition of their paying cess, Kirkwall made exactions upon Stromness with inequality of distribution, and with most vexatious, unrelenting, and illegal severity. The people of Stromness complied with the exactions from 1719 till 1743; but, seeing ruin coming on their trade, they then resisted, and entered on a

successful litigation against their oppressors before the Convention of Royal Burghs, the Court of Session, and the House of Lords. In 1754 they obtained from the second of these courts a declaration that 'there was no sufficient right in the burgh of Kirkwall to assess the village of Stromness, but that the said village should be quit thereof, and free therefrom, in all time coming;' and, in 1758, after their relentless persecutors had dragged them to the House of Lords, they obtained from that court of final appeal a decision affirming the declaration of the Court of Session. By this decision all the villages in Scotland became free and independent of the royal burghs; and Stromness grew rapidly in importance, in 1817 being erected into a burgh of barony. It has not, however, altered much since 1847, when Hugh Miller described it as 'a narrow, tortuous slip of a town, nearly a mile long, and fairly thrust by a steep hill into the sea, on which it encroaches in a broken line of wharf-like bulwarks, where, at high water, vessels of a hundred tons burden float so immediately beside the houses that their pennants on gala days wave over the chimney tops. This steep hill, 292 feet high, and called the Ward Hill, forms part of a granitic axis, about 6 miles in length by a mile in breadth, which forms the backbone of the district, and against which the Great Conglomerate and lower schists of the Old Red are upturned at a rather high angle.' The bay or natural harbour excels in safety and commodiousness the great majority in Britain. It extends $1\frac{1}{2}$ mile from S to N, and is entered by a passage $\frac{1}{2}$ mile wide, but expands in the interior to a width of 3 furlongs. Sheltered to the S by Graensay Island, and at its mouth by the Inner and Outer Holms, it has a firm clay bottom, and sufficient depth of water for ships of 1000 tons burden, and is protected from the violence of every wind. Even the water space outside the Holms affords excellent anchorage for shipping, and may be considered as something of an outer harbour. Two substantial patent slips admit vessels of 700 tons burden; and a new and commodious pier was opened in 1879. The American vessels in the rice trade formerly unloaded here their cargoes for the different ports of Britain, but were afterwards induced to prefer the Isle of Wight. Many vessels, owing to the excellence of the harbour, call at Stromness for shelter, provisions, or men; and among them are annually the Hudson's Bay vessels. An agent of the Hudson's Bay Company resides in the town. A considerable number of vessels belong to the port; and many boats are employed in the local fisheries. Boat and ship building is carried on to a noticeable extent; but the manufacture of linen and woollen cloth has been long discontinued; and the making of straw-plait, which formerly employed a large number of women, is also quite extinct. Cattle fairs are held on the first Wednesday of every month and the first Tuesday of September. Stromness has a post office, with money order, savings bank, and telegraph departments, a town-hall, a custom house, a submarine cable (1876) to Scrabster, branches of the Commercial, National, and Union Banks, two hotels, a gas company, a natural history society with a good museum, a court-house, a public library, a newsroom, a lifeboat, a rocket brigade, agricultural and horticultural societies, Freemason and Good Templar lodges, golf and bowling clubs, a battery of volunteer artillery, etc. The parish church, built in 1814, contains 1200 sittings; the Free church dates from Disruption times; and the U.P. church, with 643 sittings, was erected in 1862. St Mary's Episcopal church, built in 1888, possesses an ancient and beautiful font of red stone. George Stewart, the 'Torquil' of *Byron's Island*, a poem on the mutiny of the 'Bounty' (1789), was the son of Stewart of Masseter, and lived in the White House, one of the earliest mortar-built houses in Stromness; and Gow or Smith, the hero of Scott's *Pirate*, was born in a house where now is the boat-building yard of Messrs Copland. He revisited Stromness in 1724, the year before his execution in London. Sir Walter himself was here in 1814, and Hugh Miller in 1847, when from the neighbouring

flagstones was exhumed the specimen of *Asterolepis* referred to in his *Footprints of the Creator*. It may also be noticed that in the churchyard is buried William Newlands (1782-1884), the 'king of the Orkney Gipsies.' Sheriff small debt courts are held on the third Thursday of March, June, and September, and the first Thursday of December; justice of peace small debt courts on the last Thursday of every month. The town is governed by a provost, 2 bailies, and 6 councillors, who also act as police commissioners under the Burgh Police Act of 1892. Its municipal voters numbered 420 in 1893, when the annual value of real property was £3647. Pop. (1831) 2524, (1841) 2057, (1851) 2055, (1861) 1795, (1871) 1634, (1881) 1705, (1891) 1698, of whom 972 were females. Houses (1891) inhabited 387, vacant 2.

The parish is bounded N by Sandwick, NE by the Loch of STENNESS, SE by the Bay of Ireland, S by Hoy Sound, and W by the Atlantic. Its utmost length, from N to S, is $4\frac{1}{2}$ miles; its utmost width is 4 miles; and its land area is 7618 acres. The W coast, $3\frac{1}{2}$ miles long, rises everywhere sheer from the sea to altitudes of from 60 to 363 feet; exhibits terrific grandeur of scenery during storms; and terminates at the southern extremity in Breck Ness, flanking the entrance to Hoy Sound. It is pierced there by a cave, called Johnson's Cave, after a shipwrecked sailor who spent four days in it in 1834. A chain of hills, prolonged southward from Sandwick, and attaining a maximum height of 518 feet above sea-level, extends from the northern boundary to within about $1\frac{1}{2}$ mile of Hoy Sound; and commands impressive views of the hills of Hoy and the northern mountains of the Scottish mainland. Limestone abounds, roofing slates were largely quarried in the latter half of the 18th century, and granite and lead have both been formerly worked. The soil of the arable lands is variously a black earth, a sandy black earth, a stiff clay, and a mixture of clay and sand. Much has been done on the Cairston estate in the way of draining, building, and other improvements, the late J. R. Pollexfen, Esq., having expended £4000 thereon; and the bare hill at the back of the town has of late years been converted into useful pasturage by the feuars amongst whom it was divided. Breckness House, near the headland of that name, was built in 1633, as an Episcopal residence, by George Graham, the last Bishop of Orkney; and above the door are carved his initials, the date, and the Episcopal arms. A little SW of the town are the ruins of the old parish church, with the graveyard and the remains of an old monastery; and in other places are ruins of ancient chapels whose history is lost to record. Stromness is the seat of Cairston presbytery in the synod of Orkney; the living is worth £164. Two public schools, Kirbuster and Stromness, with respective accommodation for 65 and 404 children, had (1893) an average attendance of 31 and 312, and grants of £52, 7s. and £474, 18s. Valuation (1884) £6095, (1893) £2569. Pop. of parish, (1801) 2223, (1831) 2944, (1861) 2540, (1871) 2403, (1881) 2410, (1891) 2333.

Stronachlachar. See KATRINE, LOCH.

Strone, a modern watering-place in Kilmun parish, Argyllshire, at the headland of Strone Point, which projects sharply between the mouth of Holy Loch and that of Loch Long, $6\frac{1}{2}$ miles WNW of Greenock, and 7 furlongs N of Hunter's Quay. Extending along the shore of Holy Loch, it chiefly consists of a chain of villas and cottages *ornées*; commands superb views of the scenery of Holy Loch and the Firth of Clyde; vies in general attraction with the best and newest of the seaside resorts of the Glasgow citizens; communicates several times a day by well-appointed steamers with Greenock, Gourock, Craignedoran, and Glasgow; and has a post office, with money order, savings bank, and telegraph departments, a good hotel, a steamboat pier, an iron public hall (1872; 400 sittings), a *quoad sacra* parochial church, an 'Alliance' church, and a public school. The *quoad sacra* parish, constituted in 1884, is in the presbytery of Dunoon and the synod of Argyll.

Pop. of village, together with BLAIRMORE, (1881) 539, (1891) 573.—*Ord. Sur.*, sh. 29, 1873.

Stronfearnan, a village in Kenmore parish, Perthshire, on the northern shore of Loch Tay, 9 miles WSW of Aberfeldy.

Stronsay, an island in the North Isles district of Orkney, approaching to within $2\frac{1}{2}$ miles S by E of Spur Ness in Sanday, $2\frac{3}{8}$ E of Veness in Eday, 3 E of the Ness of Ork in Shapinsay, 7 NNE of Mull Head in Pomona, and 12 NE of Kirkwall. Its utmost length, from NNW to SSE, is $7\frac{1}{2}$ miles; its utmost breadth is $4\frac{1}{2}$ miles; and its area is 15.3 square miles, or 9840 acres. By the Bay of Holland on the S, Odin and Mill Bays on the E, Papa Sound on the NE, and St Catherine's Bay on the W, Stronsay is cut into three peninsulas in such a way that no part of it is more than 1 mile distant from the sea, and that its coast-line has an extent of not less than $35\frac{1}{2}$ miles. The principal headlands are Links Ness and Huip Ness to the N, Grice Ness, Odin Ness, and Burgh Head to the E, and Lamb Head, Tor Ness, and Rousholm or Roithisholm Head to the S—all of them low, except Burgh and Rousholm Heads; while five islets, lying off its shores, are PAPA-STRONSAY to the NE, AUSKERRY to the S, LINGA HOLM to the W, and Little Linga and Holm of Huip to the N. The largest of eleven small lakes are Meikle Water (5×2 furl.; 28 feet above sea-level) towards the centre, and Lea Shun ($4\frac{1}{2} \times 3\frac{1}{2}$ furl.) in the S. Three mineral springs, all near one another on the E coast, were once in high medicinal repute. The surface is of moderate elevation; but an almost continuous ridge running through the island attains 154 feet at Burgh Hill in the SE, and 141 at St John's Hill in the N. The predominant rocks are clay and sandstone, and lead-ore has been found. The soil is mostly a strong clay, with a rich red clay soil; but Rousholm, the south-western peninsula, consists largely of sandy soil. The interior was formerly a tract of the flayed moorland common in Orkney, but now it is all improved or nearly so. The island is traversed by good roads; and much has been done in the way of reclamation, building, fencing, etc., in the course of the last fifty years. There is a post office, with money order, savings bank, and telegraph departments, under Kirkwall. Antiquities are tumuli, some Picts' houses, and a circular thick-walled structure at Lamb Head. The parish of Stronsay and Eday (16,404 acres) comprises the inhabited islands of Auskerry, Eday, Papa-Stronsay, Pharay, and Stronsay, all noticed separately. It comprehends no fewer than five ancient parishes—Eday and Papa-Stronsay, each consisting chiefly of its cognominal island; and St Peter's, St Nicholas, and Lady, consisting respectively of the northern, southern, and western sections of Stronsay. Besides the kirks of these parishes, there were anciently so many as 10 chapels—4 in Stronsay, one of which was called St Margaret's Kirk; 2 in Papa-Stronsay, dedicated respectively to St Nicholas and St Bride; 1 in Eday; and 1 in each of the pastoral islets of Little Linga, Linga Holm, and Auskerry. The ruins of the majority of these chapels still exist. Ecclesiastically giving off Eday *quoad sacra* parish, Stronsay and Eday is in the presbytery of North Isles and the synod of Orkney; the living is worth £270. Stronsay parish church, built in 1821, and repaired in 1890, contains 500 sittings; and Stronsay U.P. church, built in 1800, contains 391 sittings. Three public schools—Central, North, and South—with respective accommodation for 120, 80, and 80 children, had (1893) an average attendance of 65, 42, and 38, and grants of £65, 12s. 6d., £34, 0s. 6d., and £37, 16s. 6d. Valuation of parish (1884) £4543, (1893) £3713. Pop. of parish (1801) 1642, (1881) 1827, (1861) 2207, (1871) 2210, (1881) 2107, (1891) 2014; of Stronsay island (1841) 1234, (1861) 1210, (1871) 1267, (1881) 1274, (1891) 1275.

Strontian, a village in Ardnamurchan parish, Argyllshire, in the mouth of a glen on the N side and towards the head of salt-water Loch Sunart, 21 miles ENE of Tobermory, and 24 SW of Fort William. At one time

a poor-looking clachan, it underwent in 1823 a total revolution under the direction of Sir James Riddell and his lady, and now consists of some renovated turf huts and neat slated cottages of granite. It has a post office, with money order, savings bank, and telegraph departments, under Ardgour, an inn, a *quoad sacra* parochial church, a Free church, a public school, and fairs on the Thursday before the last Wednesday of May, and the Thursday before the last Wednesday of October. The *quoad sacra* parochial church was built in 1827 at the expense of Government, and contains nearly 500 sittings. Strontian House, in the vicinity of the village, is the seat of Sir Rodney Steuart Riddell, fourth Bart. since 1778 (b. 1838; suc. 1883). Lead mines in the glen to the N of the village were worked from the beginning of the 18th century till 1855. They contain a great variety of very rare calcareous spars, with splendid specimens of the staurolite; and are famous for having yielded, in 1790, a metal of the alkaline earths, known ever since to naturalists as strontium, and then found in them in the form of strontites or carbonate of strontium. The *quoad sacra* parish is in the presbytery of Mull and the synod of Argyll. Pop. (1871) 803, (1881) 691, (1891) 674, of whom 614 were in Ardnamurchan and 60 in Morvern.

Stronvar, a mansion in Balquhiddier parish, Perthshire, near the southern shore and the foot of Loch Voil, $5\frac{1}{2}$ miles SW of Lochearnhead. It is a Scottish Baronial edifice, built in 1850 from designs by the late David Bryce, R.S.A. Its owner is James Carnegie, Esq. (b. 1846).—*Ord. Sur.*, sh. 46, 1872.

Strowan, a mansion in MONZIEVAIRD and Strowan parish, Upper Strathearn, Perthshire, near the right bank of the Earn, 3 miles W of Crieff. Built in the latter half of the 18th century, and greatly enlarged in 1866, it is the seat of Thomas James Graham-Stirling, Esq. (b. and suc. 1811), who has spent between £20,000 and £30,000 in improving the estate.—*Ord. Sur.*, sh. 47, 1869. See chap. xxxix. of T. Hunter's *Woods and Estates of Perthshire* (1883).

Struan. See BLAIR ATHOLE and BRACADALE.

Struy, a place, with a public school, in Kilmorack parish, Inverness-shire, between the confluent Farrar and Glass, 10 miles WSW of Beaulieu, under which it has a post office.

Stuart Castle. See CASTLE STUART.

Stuartfield. See STEWARTFIELD.

Stuckgown House. See ARROCHAR.

Sueno's Stone. See FORRES.

Suilven. See ASSYNT.

Sulem or Sulom Voe, a voe or sea-loch on the E side of the mainland of Shetland, striking $8\frac{1}{2}$ miles south-south-westward between Northmaven and Delting parishes, and varying in breadth between 3 furlongs and $2\frac{1}{2}$ miles.

Sule Skerry, a small island in the North Atlantic, lying in $50^{\circ} 10' N$ lat. and $4^{\circ} 30' W$ lon., and distant from Hoy Head, the nearest point of the Orkney Islands, some 37 miles west, and the same distance in a NE direction from Cape Wrath. It is about 900 yards long and 400 broad, and rises on the highest ground to a height of 50 feet above the sea. Seals and sea-fowl frequent the pools and rocks in great numbers. The former are mostly gray in colour or spotted with black and white, among them being many large specimens; and among the sea-fowl are 'kittiwakes,' auks, razor-bills, and green cormorants. The island is exposed to the full fury of the Atlantic, and was formerly very dangerous to shipping. In 1892-94, however, a light-house was erected on the highest point of the island. The lantern is the largest in Scotland, and the height of it above sea-level is 130 feet. It gives a fixed light visible for a radius of 18 miles. The dangerous island known as the Stack, a huge isolated rock, or rather series of rocks, rising at the highest point 140 feet out of the water, lies $4\frac{1}{2}$ miles SW of the Sule Skerry, whose light will also warn the numerous vessels which pass in this direction of the proximity of the Stack.

Summerhill. See MACHAR, NEW.

Summerhill. See AYTON.

Summer Isles, a group of islets at the entrance of Loch Broom, on the W coast of Ross and Cromarty. Only one of them, Tanera More, is inhabited, and only nine or ten are of sufficient size to be occupied as pastures. They lie at from 5 furlongs to 4 miles' distance from the coast, and are composed of Old Red Sandstone. Tanera More is $1\frac{1}{2}$ mile long and $1\frac{1}{2}$ broad; and has an irregular rocky surface, rising to the height of 406 feet above sea-level. The other islets are all similarly rocky, but of much less elevation. The whole group are bare; and except where their bluff coasts are worked into caverns and points by the incessant action of the sea, they possess not one feature of picturesqueness or beauty. 'Why they are called the Summer Islands,' says Dr Macculloch, 'I know not; as they have a most wintry aspect, as much from their barrenness and rocky outlines, as from the ugly red colour and the forms of their cliffs.' Pop. of Tanera More (1871) 114, (1881) 119, (1891) 95.—*Ord. Sur.*, sh. 101, 1882.

Sunart, a district in the extreme N of Argyllshire. Its length is 12 miles, and its breadth 6. It is bounded on the N by Loch Shiell, on the E by Ardgour, on the S by Loch Sunart, and on the W by Ardnamurchan. See ARDNAMURCHAN and SUNART, LOCH.

Sunart, Loch, a sea-loch of Argyllshire, winding $19\frac{1}{2}$ miles eastward, from the northern entrance of the Sound of Mull, to within 5 miles of Loch Linnhe. It separates Ardnamurchan and Sunart on the N from Mull and Morven on the S. Its breadth, for the first 5 miles, is generally upwards of 2 miles, but afterwards varies between 3 and 11 furlongs. It contains a number of islets, the chief of which are ORANSAY, Carnich, Riska, Dungallan, Garve, and More. Glen Tarbert—a rough pastoral valley—extends from its head to Loch Linnhe, and brings down to it a parliamentary road from Corran Ferry, whence the communication is continued to Fort William. Loch Sunart, though little visited, possesses considerable scenic beauty.

Sunderland Hall, a mansion in Selkirk parish, Selkirkshire, between the confluent Tweed and Ettrick Water, $2\frac{1}{2}$ miles N of Selkirk town. Its owner is Charles Henry Scott-Plummer, Esq. (b. 1859; suc. 1880).—*Ord. Sur.*, sh. 25, 1865.

Sunderland House, a modern mansion in Kilcho-man parish, Islay island, Argyllshire, 5 miles W of Bridgend.

Sundrum, a mansion in Coylton parish, Ayrshire, on an eminence near the left bank of the Water of Coyle, $5\frac{1}{2}$ miles E of Ayr. Its oldest part is a tower of unknown antiquity, with walls 10 feet in thickness, whilst the modern portion dates from 1792. Acquired by his grandfather in 1750, the estate now belongs to John Hamilton, Esq. (b. 1806; suc. 1837).—*Ord. Sur.*, sh. 14, 1868. See A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1885).

Sunlaws, an estate in Roxburgh parish, Roxburghshire, on the E side of the Teviot, $\frac{1}{2}$ mile SSE of Roxburgh station. The mansion was burned down in 1885. Its owner is Robert Scott-Kerr, Esq. (b. 1859; suc. 1890).—*Ord. Sur.*, sh. 25, 1865.

Sunnyside Asylum. See MONTROSE.

Sutherland (Scand. *Suðer-land*, 'the southern land,' i.e., the land to the S of the Orkneys), a county in the extreme N of Scotland bounded N by the Atlantic Ocean, E by the county of Caithness, SE by the Moray Firth, SSW by the Dornoch Firth and the county of Ross and Cromarty, and WNW by the Minch and the Atlantic Ocean. In shape it is an irregular pentagon with the apex to the NW at Cape Wrath. The side along the N measures 41 miles in a straight line from Cape Wrath eastward to a point midway between the Bay of Bighouse at the mouth of Glen Halladale and Sandside Bay at Reay in Caithness—the distance following the windings of the coast being nearly double; the E side measures $30\frac{1}{2}$ miles in a straight line from the point just indicated to the Ord of Caithness; the SE side, 24 miles in a straight line from the Ord of Caithness to the point at the entrance to the Dornoch Firth;

the SSW side, 49 miles in a straight line from this point to Loch Kirkaig at Enard Bay—the distance following the windings in all these cases being somewhat more; and the distance along the WNW side, from Loch Kirkaig to Cape Wrath, is in a straight line $35\frac{1}{2}$ miles, but following the windings it is double that length. The distance from Rhu Stoe, which is the most westerly point, east-north-eastward to the point where the boundary-line with Caithness reaches the Atlantic, is 59 miles, and the distance from Cape Wrath south-eastward to the point at the N side of the entrance to the Dornoch Firth is $63\frac{1}{2}$ miles. The only alterations made by the Boundary Commissioners in this county were in the parishes of FARR, REAY, DORNOCH, and ROGART, but none of the changes affected the county boundaries. The total area of the county is 2125·717 square miles or 1,359,848 acres, of which 1,297,849 are land, 47,633 are water, 12,812 are foreshore, and 1553 are tidal water. Of the whole land area of 1,297,849 acres, only 31,787 were in 1894 under crop, bare fallow, and grass, and 18,784 under wood, all the rest being rough hill grazing, heath, peat, or stony waste. The increase in land under plough and grass has been 2970 acres within the last forty years, and of that under wood 7971 acres. The climate varies considerably. Along the Moray Firth coast and in the straths the mean annual temperature is about 45° . In the lower districts snow does not lie long, and the winters are comparatively mild and open, but in spring there are cold N to E winds, and in autumn the glens are early visited by sharp frosts. Among the uplands of the interior of the county the winters are long and severe. The rainfall in the low district along the Moray Firth is on an average little over 31 inches, and along the N coast it is 36 inches, but in the W and NW, where the winds from the Atlantic bring in large quantities of vapour, it rises to 60 inches. The prevailing winds are westerly and north-westerly; those next in frequency are from the E, and are generally wet. Rain falls, on an average, on 200 days in the year. Among the counties of Scotland Sutherland is fifth as regards area, the larger ones being Inverness, Argyll, Ross and Cromarty, and Perth; but it is twenty-ninth as regards population—the only ones below it being Bute, Peebles, Nairn, and Kinross—and twenty-seventh as regards valuation. In proportion to area it is the least densely populated county in Scotland, the average number of persons to the square mile being only 11, while Inverness-shire, with 22, comes next.

Along the E side the boundary line follows the rising ground forming the watershed to the E of Strath Halladale—with the Halladale river flowing to the N—and Strath Beg and Strath Ullie—with the river Ullie or Helmsdale flowing to the S. To the E of Strath Halladale the height is nowhere over 900 feet, and is generally between 700 and 800, but to the E of the valley of the Helmsdale the average height is from 1000 to 1700 feet, the highest points being Cnoc Crom-uil (1199), Knockin Heights (1416), Cnoc Coirena Fearnna (1434), Cnoc an Eircennaich (1698), Crag Scalabsdale (1619), Cnoc na Maol (1315), Cnoc na Saobhaide (1206), Cnoc an Damhain (1324), and thence by Cnoc an Tùbhadair (1078) and the road over the Ord of Caithness (726) to the sea. The run of the boundary along the SSW side has been indicated in describing the boundaries of Ross and CROMARTY, the greater part of it being formed by the river Oykel. The N and NW sides are deeply indented by sea-lochs. On the N from Cape Wrath eastward are Balnakill Bay with the Kyle of Durness, Loch Eriboll, Tongue Bay and the Kyle of Tongue; Torrisdale Bay at the mouth of Strath Naver, with the lesser bays of Farr, Swordly, and Kirtomy to the E; Armadale Bay, Strathly Bay, and Bay of Bighouse ($\frac{1}{2} \times \frac{1}{2}$ mile) at the entrance to Strath Halladale. To the E of Balnakill Bay is a long narrow promontory (2 miles $\times$ 3 furl.) terminating in Fair Aird or Far-out Head; the broad projecting mass of land to the E of the entrance to Loch Eriboll is Kennageal or Whiten Head; to the NE of Farr Bay is Farr Point, and between Armadale

Bay and Strathay Bay there is a projecting mass terminating on the N at Strathay Point. Near the entrance to Loch Eriboll are Eilean Hoan and the smaller Eilean Cluimhrig; at the entrance to Tongue Bay are the Rabbit Islands, and $\frac{1}{2}$ mile NE, Eilean Isal and ELLAN NAN RON, separated from the mainland by Kyle Rannoch ($\frac{3}{4}$ mile); and there are a number of smaller islands. The only inhabited island is Ron, which is separately noticed, as is also Hoan. The WNW side is still more broken than the N. From Cape Wrath southward are Sandwood Bay with the shallow Sandwood Loch, Loch Inchard, Loch Dougal ($\frac{1}{2} \times \frac{1}{2}$ mile), Loch Laxford with Loch a'Chathaidh branching off its N side, Scourie Bay, the large Edderachylis or EDDRACHILLIS Bay from which branch off Badcall or Badcaul Bay, Loch Cairnbawn (see KYLESKY) branching eastward into Loch Glendhu and Loch Glencoul, Loch Ardvar ($1 \times \frac{1}{2}$ mile), Loch Nedd ($\frac{3}{4} \times \frac{1}{2}$ mile), and Classnessie Bay; Bay of Stoer, Achmelvich Bay, Loch Roe ($1 \times \frac{1}{2}$ mile), Loch Inver ($2\frac{1}{2} \times \frac{3}{4}$ mile), and Loch Kirkaig ($\frac{1}{2} \times \frac{1}{2}$ mile). The only very prominent headland is Rhu Stoer, with the Point of Stoer on the SW side of Eddrachillis Bay. There are an immense number of islands, of which the chief are Eilean an Roin Beag and Eilean an Roin Mor (5×1 furl.) 2 miles NW of the mouth of Loch Inchard, Handa S of Scourie Bay, separated from the mainland by the Sound of Handa, Calbha Beag and Calbha Mor at the entrance to Loch Cairnbawn, Oldany in the S of Eddrachillis Bay, and Soyea at the entrance to Loch Inver. Handa and Oldany were formerly inhabited, but are not so now. Fuller details will be found in the separate articles dealing with the places noted. Both the N and NW coasts are bold and rocky, and some of the cliff scenery is very fine and impressive, particularly about Durness, Cape Wrath, and the island of Handa. On the Moray Firth side the ground is generally low and sandy, and the only opening is Loch FLEET.

Districts and Surface.—In the extreme NW of the county is Durness, and from this eastward along the N coast are the districts of Tongue and Farr, while extending down the W coast are Eddrachillis and Assynt. In the SE along the Moray and Dornoch Firths are the Helmsdale, Loth, Brora, Golspie, Rogart, Dornoch, and Creich districts, and N of the latter at the lower end of Loch Shin is the Lairg District. The minor subdivisions are almost all connected with the straths, and will be afterwards noticed. The moorland waste between Kyle of Durness and Cape Wrath is known as Parph, and is marked on the map in Blau's *Atlas* as haunted by 'verie great plenti of wolves'; while Sir Robert Gordon says that 'there is an excellent and delectable place for hunting called the Parve wher they hunt the reid deer in abundance.' Between Loch Eriboll and the Kyle of Tongue is A'Mhoine. Round the greater part of all the coast except in the extreme NW, in the bottom of the larger glens, and round most of the large lochs there are tracts of low ground, occupying about $\frac{1}{3}$ of the whole county, which nowhere rises to a height of more than 500 feet. Of the remainder the greater part is from 500 to 1000 feet high, while portions here and there reach heights of from 2000 to 3000 feet, and at one or two points rise above 3000. 'The whole of the interior,' says a recent writer, 'is mountainous, varied with elevated plateaus covered with heath, vast fields of peat bog, some pleasant straths of average fertility, watered by considerable streams and numerous lakes, embosomed either in bleak dismal regions of moorland, or begirt by a series of hills of conglomerate, whose naked and rugged sides have no covering, even of heather. Wildness and sterility are the great features of the landscape, the dreary monotony being seldom relieved by tree or shrub; and this uniformity of desolation is only occasionally broken by some glen or strath presenting itself as an oasis of verdure in the bleak desert'; but this description, though in the main fairly correct, hardly conveys an adequate idea of the number of the straths or of the extent to

which many of the lochs and glens have had much of their bleak appearance softened or removed by fringes of wood.

Though the higher hills can hardly be said to form regular chains or groups, but are scattered about, solitary, with picturesque and curious outlines, or in broad-based lumpish masses without any markedly characteristic features at all; yet the mountainous moorland forming the main portion of the surface is divided into quite distinct portions by a number of straths with well-marked trends. These fall into two great divisions. If a line be drawn from Cape Wrath south-eastward to the centre of the county at Beinn Cleith Bric (Klibreck; 3154 feet), and thence E by N to the centre of the boundary line with Caithness, it will be found that all the hollows to the N and E of these lines, in part of Durness, Tongue, and Farr, run from N to S, while all over the rest of the county the direction of the valleys is from SE to NW. Along the northern portion the principal glens are Strath Dionard southward from the Kyle of Durness, Strath Beag southward from the head of Loch Eriboll, the hollow of Loch Hope and Strath More southward from the entrance to Loch Eriboll, the hollow of Kyle of Tongue and of Amhainn Ceann Locha at its head, the valley of the Borgie and Loch Laoghal, and Strath Naver, both southward from Torrisdale Bay. Strath Naver is the largest valley on the N coast, and near the upper end it branches off W by S into the hollow in which is Loch Naver and the river Mudale, and eastward into a hollow leading to that in which are Lochs nan Cuinne, a' Chlair, and Baddanloch, which send off their surplus water to the river Helmsdale. Southward from Strathay Bay is the hollow drained by Strathay Water, and from the Bay of Bighouse Strath Halladale extends inland to Forsinard. Short straths extend inland south-eastward from most of the large lochs on the NW coast, but they are neither so large nor well-marked as those in the N; the chief one is that from Lochs Inchard and Laxford, by Loch Stack and Loch More. Along the Moray Firth coast, beginning at the NE end, the principal hollows are Strath Ullie or Helmsdale, the short Glen Loth, the hollow occupied by Loch Brora and dividing at its upper end into the Valley of the Black Water and Glen Skinsdale (both N) and Strath Brora (W), the small Dunrobin Glen behind Dunrobin Castle, Strath Fleet, and Strath Carnach, both branching off from the head of Loch Fleet, and the great hollow of the Dornoch Firth and Strath Oyckell. From the latter at Invershin the great hollow occupied by the river Shin and Loch Shin branches off to the N and NW, and continues by Loch Merland through the narrow glen of Allt Ceann Locha, to the low ground extending down the sides of Loch More and so to the NW coast. The highest point all along is little over 400 feet above sea-level, and the hollow is traversed by the main line of road from the SE to the W coast. Near the lower end of Loch Shin the minor Strath Tirry branches off to the N and NW, and off Strath Oyckell, which has here an E and W direction $6\frac{1}{2}$ miles above Invershin, Glen Cassley branches away to the NW.

Several of the points that reach a height of over 1000 feet have already been mentioned in describing the boundary between Sutherland and Caithness, and others are Creag an Oir-airidh (Hill of Ord; 1324), NE of Helmsdale; Eldrable Hill (1338), Beinn na Melich (1940), and Creag a' Mheasgain (1346) between Helmsdale and Glen Loth; Beinn na h-Urrachd (2046) and Beinn Dobhrain (2060), both at the head of Glen Loth; and from these the high ground curves round by Creag Mhor (1581), Cnoc a' Chruabaich Mhoir (1382), Meall an Liath Beag (1512), Meall an Liath Mor (1608), Beinn Smeoral (1592), and Beinn Chol (1767) towards Loch Brora, on the opposite, or south-western, side of which is Beinn nan Corn (1706), with the shoulders of Meall Odhar (1326) to the W and Cagar Feosaig (1239) to the SE. On the opposite side of Dunrobin Glen is Beinn Lundie (1462 feet), with the shoulders of Cnoc na Gamha (1220)

to the S and Beinn a Bhragie (1256) to the SE behind Golspie. In the district bounded N by the hollow of Strath Fleet, S by the Dornoch Firth, and W by the river Shin, only a few patches rise over 1000 feet, and none of them to any great extent, the highest points being Beinn Donuill (1144 feet) near the centre, and An Stocbheinn (1104). To the W of the river Shin, and between Loch Shin and Glen Cassley, the heights have a continuous summit-level of over 1000 feet except at two points near the SE end. The highest points from SE to NW are Cnoc a Choire (1818 feet), Carn nam Bo Maola (1389), Beinn Sgreamaidh (Ben Screavie; 1428), Carrachar Dubh (1288), and Maol a' Bhealaich (Maol-veally; 1678), from which a narrow ridge leads to Ben Leoid (2597) between the glens leading up from Loch Glendhu and Loch Glencoul. To the W of Ben Leoid is Beinn Aird da Loch (1722 feet) between the lochs just mentioned, and E of it Meall an a' Chuail (1500), with Meall na Leitreach (1852) to the NW and Meall an Fhuir Loch (2010) to the NE. To the N of Loch Glendhu is Beinn a Bhutha (1777 feet), NW of which beyond Loch an Leathad Bhuain (Led Vuan) is Ben Dreavie (1500), and farther N still at the NW end of Loch More and overlooking Loch Stack is the isolated Ben Stack (2364). To the S of Loch Cairnbawn is Quinag (2653 feet), with shoulders Sail Ghorm (2551; NW), Sail Garbh (2100; N), and Spidean Coinich (2508; S). To the S of this is Loch Assynt, and in the district bounded by the Loch on the N, the river Loanan on the E, and the county boundary at Loch Veyatie and Fionn Loch on the S, are Beinn Garbh (1769 feet), Canisp (2779), and the curious Suilven (The Sugar Loaf; 2899). To the NE, E, and SE of Loch Assynt are Glas Bheinn (Glasven; 2541 feet), Beinn Uidhe (Uie; 2384), Beinn an Fhurain (Ben an Urain; 2500), Ben More Assynt (3273), with a western top Coinnemheall (Coniveal; 3234), to the S of which is Breabag (2670). The heights along the Cromalt Hills have been already noticed under Ross and Cromarty. The southern shoulder of Ben More Assynt is Carn nan Conbhairean, and to the SE of it is the outlying summit of Meall an Aonaich (2345 feet), which is cut off by the hollows of the Ruathair and Muic from the high ground that stretches away to the SE between the upper Oyckell and the Cassley with an average height of about 1200 feet, the highest points being near the centre at Carn na Ceardaich (1633) and Beinn na Eoin (1785). In the south-western district between Loch Inchard and the Kyle of Durness and lower Strath Dionard a height of over 1000 feet is reached at several points, but only Creag Riabhach (1592 feet), Meall na Moine (1522), and Farmheall (Farveal; 1709) rise to over 1500. At the head of Strath Dionard a line of heights commences and stretches south-eastward into the centre of the county, being divided into minor sections by cross glens. The highest points from NW to SE are Foinne Bheinn (Foinaven) with its different tops Ceann Garbh (2952 feet), Ceann Mor (2980), and Creag Dionard (2554); Arcuil (2580), Meall a' Chuirn (Meall Horn; 2548), Sabhal Mor (2288), Sabhal Beag (2393), Meall Garbh (2471), Meall an Liath (2625), Carn Dearg (2613), Carn an Tionail (2484), Riabhach (2500), Ben Hee (2864), Creag Dhubb Mhor (1821), Creag Dhubb Bheag (1600), Meall an Fhuarain (Uaran; 1549), Beinn Cleith Bric (Klibreck) with the tops of Meall an Eoin (3154) and Carn an Eild (2500), and the lumpy mass of Beinn an Armuinn (Ben Armine) with the tops of Creag na h-Iolaire (2278) and Creag Mhor (2338). Between Strath Dionard and the head of Loch Eriboll are Beinn Spionnaidh (2537 feet) and Grann Stacach (2630); between Strath More and the head of Kyle of Tongue is Ben Hope (3040), with the north-eastern shoulders Creag Riabhach Bheag (1521), Creag Riabhach Mhor (1500), and Meall an Liath (1952); 5 miles E of Ben Hope is Ben Laoghal (Ben Loyal; 2504), and on the opposite side of Loch Laoghal is Beinn 's Tomaine (Ben Stomine; 1728); while 12 miles ESE near the sources of the Helmsdale river are Ben Griam Bheag (1903) and Ben Griam Mhor (1936).

Rivers and Lakes.—Sutherlandshire may be divided into three different drainage basins, by lines drawn from Cape Wrath south-eastward by Creag Riabhach, Fionne Bheinn, and Meall a' Chuirn to Carn Dearg; from Carn Dearg southwards by Ben Leoid, Beinn an Fhurain, and Breabag to the E end of the Cromalt Hills; and from Carn Dearg in a winding course by the N end of Ben Hee, the S end of the high ground at Creag Dhubb Bheag, the S end of Beinn Cleith Bric, to Creag na h-Iolaire, thence N by E along the E border of upper Strath Naver, and thereafter in a winding course eastward to Forsinard. In the district to the N of the first and third of these lines and covering about half the whole county the general inclination is to the N, and all the rivers run to the Atlantic, the chief from W to E being the Chearbhag; the Claignonach, the Buaigheal Duibhe, and the Dionard, all flowing to Kyle of Durness; the Amhainn an t' Stratha Beag, at the top of Loch Eriboll, and the river Hope, near the entrance; the Melness, near the entrance to the Kyle of Tongue, the Amhainn Ceann Locha at its head, and the Allt an Rian on the E side at the village of Tongue; the Allt an Dearg at Kyle Rannoch; the Borgia and the Naver—with upper tributaries, the Mudale Bagaisteach (Bagastie) and Mallart—at Torrisdale Bay; Strathly Water at Strathly Bay; and the Halladale—with upper tributary Dyke Water—at Bay of Bighouse. In the district W of the first and second lines, and covering about one-sixth of the whole county, the streams flow westward or north-westward to the Minch and the Atlantic. The chief are, from N to S, the Sinaidh, flowing into Sandwood Bay; the Laxford, flowing to Loch Laxford; the Inver, flowing from Loch Assynt to Loch Inver, and its upper continuation, the Loanan, flowing into Loch Assynt at Inchadamf; the Amhainn na Clach Airdh, also flowing to Loch Inver; and the Kirkaig from Fionn Loch and Loch Veyatie, flowing along the boundary with Ross and Cromarty to Loch Kirkaig. In the third division, between the second and third of the lines mentioned, and covering one-third of the county, the rivers flow in a south-easterly direction to the Moray Firth. The principal streams, from NE to SW, are the Helmsdale, Loth Burn, the Brora, the Black Water, Golspie Burn, the river Fleet, the river Evelix, and the Oyckell, with its tributaries the Shin and the Cassley.

The county is full of lochs of all sizes, from Loch Shin ($16\frac{1}{2} \times \frac{1}{4}$ mile; 270 feet above sea-level) down to mere tarns. There are said to be more than 250 in the Assynt district alone, and 70 may be counted from the summit of Quinag. The western drainage basin is simply a network of small lochs and lochans. The principal sheets of water—which alone it is possible to mention here—are:—(in the northern drainage basin) Loch Airdh na Beinne, W of Kyle of Durness; Loch Hope (12), E of Loch Eriboll; Loch na Seilg and Loch a' Ghabha Dhuibh, high up Ben Hope; Loch an Dith-reibh (Deerie), in the glen upward from Kyle of Tongue; Loch Creagach and Loch Laoghal (both 369), in the hollow of the river Borgia; Loch Naver (247) and Lochs a' Bhealaich and Coir' an Fhearna (both 570), in the upper part of Strath Naver, to the W and N respectively; and Loch na Meide (518), to the NW; Loch Meadie (405), SE of Farr; Loch Leum a' Chlamhain (770), between the two Ben Griams; (in the south-eastern basin) Loch an Ruathair (415) and Loch Truid Air Sgithiche (Loch Truderscaig; 426), Loch nan Cuinne, Loch a' Chlair, and Loch Baddanloch (all 392); Loch Allt an Fhearna (433) and Loch na Moine (377), all in the upper waters of the Helmsdale river; Loch Brora (91), on the Brora; Loch Migdale (115), E of Bonar-Bridge; Loch Shin (270), Loch a' Ghriama (304), and Loch Merkland (368), all in the valley of the Shin; Loch Fiodhaig (Fiack), on one of its feeders; and Loch Ailsh (498), on the upper part of the Oyckell; (in the western drainage basin) a chain of small lochs E by S of Loch Inchard; Loch Stack (118) and Loch More (127), both in the valley of the Laxford river; Loch an Leathaid Bhuain (Led Vuan), discharging by the Muldie Burn into Loch

Glendhu; Loch Leothaid (Leoid), W of Quinag; Loch Assynt (215), in the valley of the Inver; Loch Crocach, 2 miles N of Loch Inver; Loch na Gainimh (Ganive), between Canisp and Suilven; parts of Fionn Loch (357) and Loch Veyatie (366), and the whole of Cam Loch (405), Loch Urigill (515), and Loch Borrolan (460), all in the valley of the Kirkaig. The fishing in all the streams and lochs is very good, especially for trout. There is a remarkable subterranean lake in the Cave of Smoo in Durness. All the chief hills, rivers, and lochs are separately noticed; and for further details reference may be made to the particular articles dealing with them.

Geology.—Along the W border of Sutherlandshire, an extensive area is occupied by those crystalline Archaean rocks which might not inaptly be regarded as the foundation stones of Scotland. From the wild headland of Cape Wrath they can be traced at intervals rising from underneath the Torridon sandstones to Loch Inchard, and from the latter sea-loch they cover a belt of ground along the coast S to the county boundary at Loch Inver. From the top of one of the minor hills at Scourie the observer can descry, for miles around, that peculiar type of scenery which is found nowhere else in Scotland. Bare, rounded hummocks and bosses of grey gneiss follow each other in endless succession, and in the hollows there are pools and lochs filling rock basins. Huge boulders are strewn over the barren hummocks, which, with the highly polished surfaces of the gneiss, give one a vivid impression of the glaciation of that region. With certain prominent exceptions, these verdureless knolls and hills of Archaean gneiss do not rise much above one uniform level, which only tends to increase the monotony of the landscape.

These ancient rocks, whatever may have been their origin, are now wholly crystalline. For the most part they are composed of micaceous, hornblende, and diallage gneisses, with bands of mica schist. Frequently they contain masses of basic material showing little or no foliation. A remarkable feature of the Archaean series to the south of Scourie is the abundance of dykes of epidiorite and peridotite traversing the gneiss in a NW direction. They must have been erupted subsequent to the consolidation and banding of the gneiss. There is clear evidence, however, to show that at a later date both gneiss and dykes were affected by dynamical movements which produced planes of schistosity and gave rise to new crystalline structures. Again, in the area between Scourie and Durness, the crystalline gneiss is traversed by a great plexus of acid igneous rocks in the form of dykes or sheets, composed of granite and associated pegmatites. The latter are admirably seen along the road leading from Loch Laxford to Rhiconich.

Numerous mineral localities are to be found in the area occupied by the Archaean gneiss, some of which have been minutely described by Dr Heddle. The rocks in the neighbourhood of Scourie are not only interesting for their lithological varieties, but also for the minerals contained in them. Garnets abound in the hornblende rocks on the shore S of the village, and at the NW promontory of the Bay of Scourie, hydrous anthophyllite with small crystals of talc or ripidolite is to be met with. Not far to the S of Cape Wrath, Professor Heddle found an interesting mineral locality yielding chert, moss-agate, actinolite, hydrous anthophyllite, steatite, and ripidolite, and he also found a thin vein of chalcopyrite and chrysocolla in the gneiss to the SE of Rhiconich. In the gneiss and pegmatite on Ben Kennabin and other localities, agalmatolite is found in considerable abundance. An interesting feature connected with the veins of pegmatite is the occurrence in them of crystals of titaniferous iron, which disintegrate under the influence of atmospheric agencies, and the grains form a black sand strewn along the seashore.

This undulating plateau of bare gneiss hills was originally covered by a vast pile of Torridon sandstones which have since been removed by denudation. Notwithstanding this excessive waste, there are still extensive relics of these overlying sedimentary deposits in

the extreme NW of the county and in Assynt. Between Cape Wrath and the Kyle of Durness they form one of the noblest cliffs in Scotland, reaching a height of 650 feet, and yet neither the base nor the top of the series is exposed in this section. Between Loch Inchard and the Kyle of Durness, however, the unconformable junction between the Torridon sandstones and the Archaean gneiss is admirably exposed at various localities. From the researches of the Geological Survey it appears that they are divisible into certain zones, the lower portion of the series consisting of breccias, conglomerates, and alternations of grits and conglomeratic sandstones. These graduate upwards into red sandstones, indicating deposition in deeper water. By a series of remarkable dislocations, which will be referred to in the article on the geology of Scotland, the unconformable base line of the Torridon formation has been repeatedly shifted, and hence, as the observer traverses the region from Rhiconich to Cape Wrath, he crosses again and again the same succession of beds. In Assynt the unconformability at the base of the Torridon strata is well marked, and in that region, too, the geologist cannot fail to realise the enormous denudation to which these red sandstones have been subjected. The great terraced escarpments of Suilven, now completely isolated from Quinaig, Canisp, and Coul More, with which they were at one time connected, enable one to compute the thickness of the vast pile of strata since removed by denudation.

The foregoing formation of Torridon Sandstone was regarded by Murchison as the equivalent of the Cambrian rocks of Wales, but recent discoveries in the overlying fucoid beds in Ross-shire have shown that the Torridon Sandstone must be of pre-Cambrian age. The discovery of certain trilobites in the fucoid beds, the horizon of which is clearly defined, proves that the quartzites, fucoid beds, and limestones, are mainly if not wholly Cambrian.

A careful examination of the sections in Sutherlandshire proves beyond doubt that there is a marked unconformability between these Torridon sandstones and the Cambrian strata overlying them. On the slopes of Quinaig and Canisp, the white quartzites at the base of the Cambrian series being inclined at a higher angle, cross the successive beds of Torridon sandstone, which are nearly horizontal or tilted at a gentle angle to the SE. Indeed, this unconformable relation is so strongly marked that the observer can trace it, even in the far distance. Still more striking proof is obtained in the Durness area, for to the W of the Kyle of Durness the Cambrian quartzites pass transversely across the edges of the underlying Torridon sandstones till they rest on the Archaean gneiss. It is apparent, therefore, that prior to the deposition of the Cambrian sediments there must have been extensive denudation of the Torridon deposits.

The various subdivisions of the Cambrian formation as developed in this county will be given in the article on the geology of Scotland. From the quartzites at the base of the formation, a regular order of succession has been established through the fucoid beds and serpulite grit to the limestones at the top of the series. In the Durness area, where the limestones yield fossils, and where they are typically developed, the Cambrian strata are arranged in the form of a basin, which has been isolated from the same series of rocks in the Eriboll area by normal faults. On the E side of these great dislocations there rises a prominent escarpment of Archaean gneiss, which is traceable from Kennabin near Durness, S by Ben Spionnu, Ben Stack, to Quinaig in Assynt. The E slope of this ridge is covered by the quartzites at the base of the Cambrian series, followed by the fucoid beds, serpulite grit, and the limestone, which are repeated by a series of folds and reversed faults. Eventually, at various localities along the line from Eriboll to Assynt, the Archaean gneiss is brought up by means of a great reversed fault or thrust plane, and is made to overlie the Cambrian strata. This is followed by another great thrust plane or reversed fault, which ushers in the eastern schists with a general dip

to the ESE at gentle angles. The peculiar features of these schists as well as the order of succession will be given elsewhere in this volume. At present it will be sufficient to state that throughout a large part of the county the metamorphic rocks are remarkably uniform in character, consisting of flaggy gneiss and mica schist, and that, disregarding minor folds, the general inclination of the beds is to the ESE. An interesting band of limestone is met with on the banks of Loch Shin at Shinness and Arskaig, which has yielded to Professor Heddle a rich variety of minerals. In approaching the limestone the mica schists and gneiss become more hornblende, while a bed of hornblende rock immediately overlies the limestone. In the contact zone the following minerals, among others, were obtained by Dr Heddle: Biotite, Actinolite, Tremolite, Asbestos, Augite, Pyrite, Sphalerite, Sphene, Apatite, Chlorite, Steatite, etc. He regards the specimens of sphene found at this locality as the finest in Britain.

Several important masses of granite and syenite occur among the eastern schists: one forms the tract of high ground round Ben Loyal; another, Ben Stomino; a third occupies a tract on the county boundary at the head of Strath Halladale; a fourth extends from Lairg to near Rogart station; a fifth is situated to the N of the Dornoch estuary on the Migdale Hill; while a sixth occurs at the Ord, and is traceable SW by Helmsdale to Lothbeg. The granite forming Ben Loyal, which is perhaps one of the most picturesque mountains in Sutherland, is fine grained, containing quartz, felspar, black mica, and hornblende. From this centre boulders were dispersed in great numbers during the glacial period, two of which deserve special notice on account of the rare series of minerals which they yielded to the Rev. Dr Joass and Professor Heddle. Occurring on the E slope of Ben Bhreack, in the line of the ice movement from Ben Loyal, there can be little doubt that they were derived from that mass. In or near a small infiltration vein traversing one of these boulders the following minerals, among others, were found: Babingtonite, Fluor spar, Sphene, Allanite, Magnetite, Ilmenite, Amazon stone, Srontianite, etc. Of these, perhaps the most interesting are the beautiful green-tinted crystals of Amazon stone.

Resting unconformably on the metamorphic rocks of Sutherland, there are numerous outliers of Old Red Sandstone which evidently belong to the lower division of that formation. They have not, as yet, been found to the W of the Kyle of Tongue; but on the hills immediately to the E of this arm of the sea there are large masses of coarse conglomerate, and also on the Roan Islands at the mouth of the Kyle. On the ridge to the E of the Kyle the conglomerate can be traced more or less continuously from Culbackie by Cnoc Fhreiceadain to the slopes of Ben Stomino, where the materials consist mainly of granitic detritus. A similar outlier occurs on the crest of Ben Armine. There are two prominent hills in the E of Sutherland, however, that rise with steep slopes from the undulating moorland of schist and gneiss which owe their special features to cappings of coarse conglomerate, viz., Ben Griam More and Ben Griam Beg. With the strata inclined at low angles, and forming a series of parallel lines, they remind one of the great cone of Morvern in Caithness. In Kirkcubry Bay, and again to the E of Strath Point, strata of the same age occur. At the former locality they consist of red sandstones, with nodular bands and red sandy clays. At the latter point they are traceable from Strathay Bay E by Melvich to the county boundary. At the base there is a pink granite breccia, with thin seams of sandstone passing upwards into a group of flagstones forming bluff cliffs, which show excellent sections of the beds. From the researches of Sir Archibald Geikie it appears that there is a gradually ascending series from the county boundary W to Bighouse Bay; but at the latter locality the beds dip to NNE. At the Portskerry Harbour the unconformability is admirably seen, the crystalline gneiss and granite being covered by a thin breccia passing up into yellow and

greenish sandstones, which yielded fish remains to Mr C. W. Peach. Still farther W, near Baligill, grey and red sandstones, with flagstones and calcareous shales yielding *Dipterus*, *Thyriscus*, and *Coccosteus*, are to be found. At this locality also a thin seam of workable limestone is intercalated with the Old Red strata.

The patches of Old Red Sandstone just described are insignificant in extent compared with the area which they cover along the E seaboard. From Ben Uarie near the Glen of Loth they can be followed S by Ben Smeorail, Ben a Braghie, to the mouth of the Dornoch Firth. Forming a belt of ground averaging 5 miles in width, they consist mainly of coarse conglomerates resting unconformably on the highly denuded metamorphic rocks. That this great development of conglomerate is of no great thickness is apparent from the fact that the river Brora has cut through the deposit, exposing the platform of crystalline rocks on both sides of the valley. Still more interesting is the narrow belt of flagstones, resembling a part of the Caithness flagstone series, which is wedged between two faults on the shore between Helmsdale and Lothbeg. The relations of these flagstones were first described by Professor Judd, who showed that the belt of strata, which is about 5 miles long and about $\frac{1}{2}$ mile broad, is bounded on the W side by a fault bringing them into conjunction with a mass of granite, while on the E side they are truncated by a fault throwing down strata of Upper Eolite age. He suggests that the great fault bounding the Secondary strata in Sutherlandshire divided into two branches along 5 miles of its course, and that the patch of Old Red flagstones has been preserved between these branching faults. The best section of the strata occurs in the Gartmore Burn N of Port Gower, where they consist of calcareous flags, red and green argillaceous beds with red and white sandstones. From these beds a fragment of *Coccosteus* has been obtained, so that there can be no doubt that they belong to some portion of the Caithness flagstone series.

Along the E coast of Sutherland from Helmsdale to the Ord, a distance of about 16 miles, a belt of Secondary strata can be traced more or less continuously, which are evidently but fragmentary relics of formations originally having a great development. By means of a powerful fault running parallel with the coast, they have been brought into conjunction with the metamorphic and associated igneous rocks already described. Partly on account of the presence of coal seams in this area, and partly owing to the abundance of fossils in many of the beds, this development of Secondary strata has been examined and described by numerous investigators. The recent researches of Professor Judd have added largely to our knowledge of the order of succession of these beds and of the physical conditions which prevailed during their deposition. The strata occupying the lowest geological position, consisting of sandstones overlaid by a peculiar cherty calcareous rock, are to be found on the seashore between Dunrobin and Golspie, in Dunrobin Glen, and in the burn of Golspie. Regarded by Professor Judd as the equivalents of the reptiliferous sandstones and cherty rock of Triassic age in Elginshire, they have, as yet, yielded no fossils to determine their horizon. They are immediately followed by sandstones and conglomerates containing pebbles derived from the foregoing strata, marking the base of the Lias. To these succeed a group of estuarine strata, consisting of sandstones, shales, and coal seams, the latter being extremely thin; and towards their upper limits they graduate into blue micaceous clays with shelly limestones yielding marine fossils characteristic of the Lower Lias, such as *Belemnites acutus*, *Ammonites caprotinus*, *A. oxyotus*, *Pholadomya ambigua*, *Pecten liasinus*, *P. tumidus*, *P. sublaevis*, *Lima punctata*, *Gryphea obliqua*, etc. The strata just described are overlain by the representatives of the Middle Lias, consisting of micaceous clays with pyrites and nodules of argillaceous limestone, inclined to the NNE at a gentle angle. It is probable that the members of this subdivision are truncated by a fault on the N side throw-

ing down the clays of Middle Oolite exposed at Clayside. This much is certain that none of the sections in Sutherland shows the relations of the Lias to the Lower Oolites. The latter are represented by sandstones, shales, and coals, in large part estuarine, and followed by marine strata on the horizon of the lower part of the Middle Oolite. The estuarine strata of Lower Oolite age are of special importance, as they contain the seams of coal which have led to repeated but not very successful mining operations. The main seam of coal, from 3 to 4 feet thick, is overlain by a roof-bed marking the base of the Middle Oolite. In places it really forms a good coal, being composed of the crushed stems of *Equisetites columnaris*, but the presence of a thin layer of pyrites considerably affects its economic value. It occurs on the shore at Brora, in the valley of the river Brora, and other localities. Owing to the estuarine character of the strata, the order of succession varies considerably, even within a short distance. Several remarkable examples of this phenomenon are given by Professor Judd, but one will suffice to show their variable character. In the section at Cadh-an-Righ on the Ross-shire coast the position of the Main Coal seam is represented only by a carbonaceous band about 5 inches thick.

Overlying the estuarine series just described, we find a considerable development of marine beds alternating with estuarine strata representing the Middle Oolite. At the base there is a prominent band known as the roof-bed of the coal-bearing strata, consisting of a hard calcareous sandstone, charged in the lower part with plant remains, and in the upper part with marine shells. In virtue of the fossils obtained from this band it has been placed on the same horizon as 'the Kelloway Rock' in Yorkshire. This zone is succeeded by a mass of clay and sandy strata, the former yielding *Ammonites ornatus*, *A. Jason*, *Belemnites Owenii*, *B. hastatus*, *Cerithium muricatum*, *Gryphaea dilatata*. In the thin zone of marine sandstones overlying these clays the following fossils have been found: *Ammonites cordatus*, *A. perarmatus*, *A. excavatus*, *Belemnites sulcatus*, etc. Next in order comes a considerable thickness of sandstones, probably of estuarine origin, which have been extensively quarried on the Braemerry and Hare Hills, as they form an excellent building stone. These are followed by a bed of grey sandy limestone regarded by Professor Judd as the equivalent of the Coralline Oolite, and yielding *Ammonites excavatus*, *A. cordatus*, *A. vertebalis*, with species of the genera *Pecten*, *Pholadomya*, *Modiola*, *Lima*, etc. This horizon is overlain by clays, sandstones, and limestones, the latter alternating with dark clays which probably mark the highest beds of the Middle Oolite in this county.

In the neighbourhood of Braemerry Hill, the foregoing series is succeeded by certain strata marking the base of the Upper Oolite. This important group—the true position of which was first defined by Professor Judd—is represented in Sutherland by shales, sandstones, and grits, seemingly of estuarine origin, and reaching a thickness of about 1000 feet. They extend along the shore from the neighbourhood of Clyne to Green Table near the Ord—a distance of 11 miles, being repeated by a series of anticlinal and syndinal folds, which afford excellent opportunities for studying the characters of the beds. Between Garty and the Ord they present certain remarkable features deserving of special notice. At Kintradwell and Lothbeg the strata possess their usual characteristics; but to the N of Garty, blocks of foreign rocks are embedded in the grits and limestones, till at the Ord these included fragments are so abundant and of such a size, that a special name has been assigned to them. They were first described by Sir Roderick Murchison as the 'brecciated beds of the Ord,' which aptly indicates their remarkable features. At certain localities; as at Colyburn, the blocks consist of the same material as the matrix, both yielding fossils of Secondary age; but such is not the case at the Ord. At the latter locality huge blocks of Caithness flags, with hard sandstones and shales, are embedded in the matrix; the former yielded to Hugh Miller fish remains

of Old Red Sandstone age, while the matrix contains Jurassic fossils. It is somewhat remarkable that these 'brecciated beds' should alternate with finely laminated shales, thin sandstones with ammonites, and even thin layers of lignite, indicating deposition in still water. These alternations only show the rapid changes in the physical conditions which prevailed during the period of the Upper Oolite in that region. From the fossils found in the matrix of the 'brecciated beds' and the strata associated with them, there can be no doubt of their geological horizon. The suggestion has been thrown out by Professor Judd, that violent floods may have occurred at intervals during that period, when sub-angular masses of the parent rocks, with trunks of trees, may have been borne seawards, and that ice rafts may have helped in the transport of the materials.

In connection with the organic remains found in the Upper Oolites of Sutherland, reference ought to be made to the rich flora which they contain, consisting of ferns, cycads, and conifers, so eloquently described by Hugh Miller in his *Testimony of the Rocks*. But in addition to the plant remains, masses of coral, ammonites, and belemnites are abundantly found in these strata. The following forms have been obtained: *Ammonites biplex*, *A. triplicatus*, *A. alternans*, *Belemnites abbreviatus*, *B. obeliscus*, *B. spicularis*, *Lima concentrica*, *L. laeviuscula*, *Pecten vimineus*, *Ostrea Bruntrutana*, *O. expansa*, *Rhynchonella Sutherlandi*, *Terebratula Joassi*, etc. Between Navdale and Green Table, the shales, grits, and limestones just described are succeeded by light-coloured sandstones, becoming ferruginous in places which as yet have not yielded any fossils. According to Professor Judd, these sandstones form the highest beds found *in situ* of the Secondary formations on the E coast of Scotland.

During the glacial period, the ice radiated from the high grounds of Sutherland in different directions. Along the W coast the general trend of the ice markings is towards the NW; on the N coast the direction varies from N to NNW; while on the E side of the watershed the striae point towards the Moray Firth. Amongst the glacial deposits, the enormous development of moraines claims special notice. It is interesting to observe the relics of these ancient glaciers along the margin of the 50-foot beach at various points in the county, thus clearly indicating the existence of glacial conditions in comparatively recent geological time.

In the course of the Geological Survey, an interesting discovery has recently been made of a bone cave in Assynt. The bones are referable to thirty-three distinct species of mammals, birds, amphibia, and fishes. The remains of the northern lynx, the Arctic lemming, the northern vole, and the brown bear were exhumed from the cave deposits. These animals no longer live in Britain, and the remains of some of them at least indicate a very considerable antiquity for these deposits.

Economic Minerals.—The bed of limestone in the metamorphic series was formerly wrought at Shinness, and likewise the calcareous band in the Old Red Sandstone at Strathay, and several of the beds of limestone on the E seaboard, N of Golspie. Numerous attempts have been made to work the coal seams in the Lower Oolite, but owing to the presence of iron pyrites in the beds their value for household purposes is much impaired. Excellent building stone is obtained from the sandstone quarries on Hare Hill and Braemerry Hill, the stone being in much request for its white colour and excellent quality. It was used in the erection of London Bridge, Dunrobin Castle, and other important buildings. Extensive operations were at one time carried on in search of gold, with no satisfactory success. From the observations made by the Rev. Dr Joass, it appears that gold was found at the following localities: in the Blackwater, Strath Brora, at the head of Clyne-Milton Burn, in the Helmsdale river and the Kildonan Burn, in the Suigill Burn, and other places. The gold in the Suigill and Kildonan Burns was found in water-rolled stones, composed of felspar and quartz. He makes the

following important statement, that since many of the streams were searched in vain, it 'suggests no widespread deposit, the result of extensive glaciation, but several independent centres connected with the local rocks.'

Soils and Agriculture.—The arable land is entirely confined to the lower part of the county, and mainly to the narrow strip along the SE coast, where the soil, though generally light, yields good returns to skilful farmers. The soil there varies from light sandy and gravelly loam through clay-loam and black loam to a stiff clay. The black loam occurs in patches, and the clay is mostly in the parish of Loth, particularly in the small tract of carse land near the mouth of the Burn of Loth. In Assynt there is practically no arable land, and in Durness little over 300 acres; but elsewhere, particularly in Strath Helmsdale, Strath Naver, Strathay, and Strath Halladale, there are patches of light soil along the edges of the rivers. The rest of the county is given up to grazings for cattle and sheep or to deer forests, of which there are the following—Ben Armine, about the hill of the same name, containing 35,840 acres; Glen Canisp, about Canisp, 30,000 acres; Glen-dhu, 40,000 acres; Gobar Nuigach, about 20 miles from Lairg, 12,000 acres; Kinloch, about 5 miles SW of the village of Tongue, 40,000 acres; and Reay, about Ben Stack, 64,600 acres—a total of about 200,000 acres devoted to this purpose. The grouse moors are good, and they are also used for grazing purposes. A large portion of the county is and must ever remain practically a heathy and rocky waste. Agricultural improvements under such conditions were very late of being attempted, especially as the county was the last district in Scotland to be opened up to free intercourse with the outer world; and their first introduction was accompanied by that transference of population known as the 'Sutherland Clearances,' the wisdom of which still forms such a vexed question among the friends of the crofters. The small tenants had, in the beginning of the 19th century, spread all over the county, taking 'advantage of every spot that could be cultivated, and which could with any chance of success be applied to raising a precarious crop of inferior oats, of which they baked their cakes, and of bere, from which they distilled their whisky. Impatient of regular and constant work, all heavy labour was abandoned to the women, who were employed occasionally even in dragging the harrow to cover in the seed. To build their huts or to get in their peats for fuel, or to perform any other occasional labour of the kind, the men were ever ready to assist; but the great proportion of their time, when not in the pursuit of game or of illegal distillation, was spent in indolence and sloth. Their huts were of the most miserable description; they were built of turf dug from the most valuable portions of the mountain side. Their roof consisted of the same material, which was supported upon a wooden frame constructed of crooked timber taken from the natural woods belonging to the proprietor, and of moss-fir dug from the peat bogs. The situation they selected was uniformly on the edge of the cultivated land and of the mountain pastures. They were placed lengthways, and sloping with the declination of the hill. This position was chosen in order that all the filth might flow from the habitation without further exertion upon the part of the owner. Under the same roof and entering at the same door were kept all the domestic animals belonging to the establishment. The upper portion of the hut was appropriated to the use of the family. In the centre of this upper division was placed the fire, the smoke from which was made to circulate throughout the whole hut for the purpose of conveying heat into its furthest extremities—the effect being to cover everything with a black, glossy soot, and to produce the most evident injury to the appearance and eyesight of those most exposed to its influence. The floor was the bare earth, except near the fire-place, where it was rudely paved with rough stones. It was never levelled with much care, and it soon wore into every sort of inequality, according to the hardness of the respective soils of

which it was composed. Every hollow formed a receptacle for whatever fluid happened to fall near it, where it remained until absorbed by the earth. It was impossible that it should ever be swept; and when the accumulation of filth rendered the place uninhabitable, another hut was erected in the vicinity of the old one. The old rafters were used in the construction of the new cottage, and that which was abandoned formed a valuable collection of manure for the next crop. The introduction of the potato in the first instance proved no blessing to Sutherland, but only increased the state of wretchedness, inasmuch as its cultivation required less labour, and it was the means of supporting a denser population. The cultivation of this root was eagerly adopted; but being planted in places where man never would have fixed his habitation but for the adventitious circumstances already mentioned, this delicate vegetable was of course exposed to the inclemency of a climate for which it was not suited, and fell a more ready and frequent victim to the mildews and the early frosts of the mountains, which frequently occur in August, than did the oats and bere. This was particularly the case along the courses of the rivers, near which it was generally planted, on account of the superior depth of soil. The failure of such a crop brought accumulated evils upon the poor people in a year of scarcity, and also made such calamities more frequent; for in the same proportion as it gave sustenance to a larger number of inhabitants when the crop was good, so did it dash into misery, in years when it failed, a larger number of helpless and suffering objects. As often as this melancholy state of matters arose—and, upon an average, it occurred every third or fourth year, to a greater or less degree—the starving population of the estate became necessarily dependent for their support on the bounty of the landlord. . . . The cattle which they reared on the mountains, and on the sale of which they depended for the payment of their rents, were of the poorest description. During summer they procured a scanty sustenance, with much toil and labour, by roaming over the mountains; while in winter they died in numbers for the want of support, notwithstanding a practice which was universally adopted of killing every second calf on account of the want of winter keep. To such an extent did this calamity at times amount, that in the spring of 1807 there died, in the parish of Kildonan alone, 200 cows, 500 head of cattle, and more than 200 small horses.'

In consequence of the constant recurrence of such famine periods, when these small tenants and their families thus became, in consequence of the loss of cattle and sheep and the failure of their crops, absolutely dependent on others for support, 'it was thought desirable that some change should be made in the condition of the people, both for their own interests and with the view of properly developing the resources of the county. The subject was remitted by Lord Stafford, the first Duke of Sutherland, to eminent agriculturists, who reported in effect, "that the mountainous parts of the estate—and, indeed, of the county of Sutherland—were as much calculated for the maintenance of stock as they were unfit for the habitation of man;" and that it seemed "as if it had been pointed out by Nature that the system for this remote district, in order that it might bear its suitable importance in contributing its share to the general stock of the country, was to convert the mountainous districts into sheep-walks, and to remove the inhabitants to the coast, or to the valleys near the sea." The movements thus indicated were carried into effect between 1810 and 1820, the great bulk of the small tenants and their families having been settled near the coast, where a limited piece of land was allotted to each at a merely nominal rent. It is stated, also, that a few who preferred that step were conveyed to Canada at Lord Stafford's expense; but it is denied that the population of the county was reduced to any appreciable extent by emigration due to these clearances; and that this is true is clear from the census returns, which show a continuous though small increase from 1801 to 1831.

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The decrease since that time has probably been brought about more by the tendency of labourers to pass south to places where wages are higher, than by emigration, compulsory or otherwise; and a recent observer, who had good opportunity of studying the subject, thinks that the smaller tenants are 'better educated, better fed, and better clothed, as well as better housed, than when they were scattered along the straths in the interior.' Sutherlandshire, along with the other counties affected, has benefited by the decisions of the Crofters Commission as regards reduction of rents and cancelling of arrears.

The increase in the amount of the arable land in the county since the beginning of the 19th century has probably been over 21,000 acres, the estimated area in 1808 having been 18,125 acres, while now it is 31,787. In consequence of the large sums spent by the people on the Sutherland estates in the purchase of oatmeal and turnips from districts outside the county, the Duke of Sutherland determined in 1870 to try to increase the arable area on his estate, and requested the late well-known agriculturist, Mr Kenneth Murray of GEANTIES, to make a careful survey of such portions of the property as seemed most suitable for reclamation. On his recommendation large tracts were cleared and reclaimed between 1873 and 1878 at LAIRG and KILDONAN at very great expense. The ground was deep-drained and deeply ploughed and trenched by means of large ploughs and other implements—many of them specially designed for the purpose—all worked by steam. The operations attracted a great amount of notice at the time, and during their progress the place was visited by a deputation of the members of the Highland and Agricultural Society in 1874 and by the Prince of Wales in 1876. In many cases the process involved the creation rather than the improvement of the soil, and was carried out, in the earlier cases at all events, at an outlay that only a very wealthy proprietor with other sources of income than these northern estates could venture to incur. In fact the expenditure on the Sutherland estates between 1853 and 1882 exceeded the income derived from them by £245,374, exclusive of the household maintenance. Of the total expenditure the sum of £254,900 was on reclamation, £226,800 on railways, and £47,516 on the works at Brora. The percentage of cultivated to whole area (2·3) is the lowest in Scotland. The areas under the various crops in different years are given in the following tables:—

GRAIN CROPS.—ACRES.

Year.	Wheat.	Barley or Bere.	Oats.	Total.
1853	217	3643	6569	10,529
1870	246	2060	6181	8,644
1884	...	2068	8277	10,423
1894	2	1622	7777	9,401

GRASS, ROOT CROPS, ETC.—ACRES.

Year.	Hay and Grass in Rotation.	Permanent Pasture.	Turnips.	Potatoes.
1853	4977	1818	2001	2507
1870	5887	4198	2506	1743
1884	7183	9332	3076	2152
1894	8236	9059	3084	1697

There are on an average about 200 acres under other grain crops, and about 50 under other green crops. The fallow used to average about 150 acres, but in 1894 it was only 43. Wheat has fallen off rapidly since 1870, principally in consequence of the wet seasons. The returns are average, but oats give a large yield, and the grain is of good quality, the soil and climate being admirably suited for this crop.

Cattle rearing is not carried on to any great extent. The old small black cattle are now gone, and their place has been taken by West Highland, polled, short-horn, and cross-bred animals. The horses on the large

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farms are Clydesdales, but on the smaller farms they are lighter, though compact, well-shaped, and active; and many of the crofters have ponies. At the beginning of the 19th century the sheep were mostly of the old small Kerry breed, but in 1806-7 these nearly all died from disease, and in the latter year two Northumbrian sheep-farmers took a grazing farm in the centre of the county about Beinn Cleith Bric and Beinn an Armuinn and introduced Cheviots, which remain the principal breed in the county. An attempt once made to introduce merino sheep did not succeed. The rents of sheep farms vary from 4s. to 7s. a head. Over 92 per cent. of the holdings are under 20 acres, and over 68 per cent. under 5 acres, and of the remainder the greater portion are under 100 acres, but some of the sheep farms are of a very large size. No county has such a large percentage of holdings under 20 acres. Of 2589 holdings, 2505 are of 50 acres or less; 29 of between 50 and 100; 42 of from 100 to 300; 9 of from 300 to 500; and 4 of above 500. The woodland has been largely increased since 1872.

The live stock in the county at different dates is shown in the following table:—

Year.	Cattle.	Horses.	Sheep.	Pigs.	Total.
1853	12,592	2794	168,170	1310	184,866
1870	10,367	2511	216,561	1378	230,817
1884	12,186	2605	218,852	1213	234,856
1894	12,689	2657	213,330	906	229,482

Industries, Communications, etc.—The county can hardly be said to have any industries except those already described under BRORA, but there is a well-known distillery at Clynelish, and a woollen manufactory at Rogart. Cotton manufacture was at one time tried in the SE, but it failed, and the spinning of linen yarn from flax imported from the Baltic, in which there was once a trade worth £8000 a year, was ruined by Bonaparte's continental system. Woollen stuffs were at one time manufactured for local supply, but the industry is gone. The manufacture of kelp, at one time extensive, was ruined here as elsewhere by the removal of the duty on barilla. HELMSDALE is one of the chief herring-fishing stations on the Moray Firth, and the salmon fishing in many of the rivers is of value and importance. There is good fishing ground off the N coast, but the difficulty of getting the fish to market prevents its being fully taken advantage of. At the beginning of the 19th century the county was without formed roads, but in 1811, under the Highland Road Act of 1808, the Parliamentary Commissioners completed the formation of a road along the E coast and through the centre, the former leading over the Ord into Caithness, and the latter to Tongue. There are now also good main lines of road from N to S by Strath Halladale and Strath Ullie, by Strath Naver and Bagaisteach to Lairg, by Strath More and Bagaisteach from Eriboll to Lairg; and from Lairg to the W coast by the hollow of Loch Shin, Loch Merklund, Loch More, and Loch Stack to Laxford, and thence to Rhiconich, Durness, and Cape Wrath; and there are also a number of good cross and district roads in the SE. The HIGHLAND RAILWAY enters the county at Invershin, runs up the hollow of the Shin to Lairg station, turns down Strath Fleet, skirts the coast from Golspie to Helmsdale, and then turns up Strath Ullie to Forsinard, where it passes into Caithness. In 1894 the County Council undertook the erection of new harbour works at Talmine (Kyle of Tongue), Skerry, and PORTSKERRA; and of pier works at Golspie and Embo, for which latter scheme a Treasury grant of £1400 and £1245 respectively was procured.

The county town and only royal burgh is Dornoch; villages with more than 500 inhabitants are Brora, Golspie, East Helmsdale, and West Helmsdale; and smaller villages are Armadale, Backies, Bonar-Bridge, Clashessie, Durness, Embo, Farr, Inver, Kinlochbervie, Kirkiboll, Lairg, Melness, Melvich, Port Gower, Scourie, Skianid, Strathay, Tongue, and Torrisdale. The chief residences are Dunrobin Castle, Achany, Balmakiel,

Creich House, Culgower, Dornoch House, Embo, Eri-boll House, Inverbrora, Kirtomry, Ospisdale, Rhives, Rosehall, Sourie House, Tongue House. The principal proprietor is the Duke of Sutherland.

The civil county comprehends the thirteen entire *quoad civilia* parishes of Assynt, Clyne, Creich, Dornoch, Durness, Eddrachillis, Farr, Golspie, Kildonan, Lairg, Loth, Rogart, and Tongue. The *quoad sacra* parishes of Stoer, Kinlochervie, and Strathay are also included. They are all included in the presbyteries of DORNOCH and TONGUE. Service is conducted in Gaelic in all the churches, of which there are in the county 17 in connection with the Established Church, and 16 in connection with the Free Church. In the year ending September 1893, there were in the county 44 schools (43 public), which, with accommodation for 4283 pupils, had 3488 on the rolls, and an average attendance of 2730. Sutherlandshire, with a parliamentary constituency of 2605 in 1893, returns a member to serve in parliament, and Dornoch being included in the Wick burghs, has a share of another. It is governed by a lord lieutenant and high sheriff, a vice-lieutenant, 8 deputy lieutenants, and 53 justices of the peace. It forms a division of the sheriffdom of Ross and Cromarty, and Sutherland, with a resident sheriff-substitute at Dornoch. Ordinary and small debt sheriff courts are held at Dornoch every Tuesday and Friday during session, and small debt circuit courts are held in May, July or August, and September or October at Helmsdale for the parishes of Loth, Clyne, and Kildonan; at Tongue for the parishes of Tongue and Farr, with the exception of Strathay; at Melvich, *quoad sacra* parish of Strathay, for the parish of Farr; at Sourie (in May only) for the parishes of Eddrachillis and Durness; and at Lochinver (in October) for the parish of Assynt. Justice of peace courts are held at Dornoch on the first Tuesday of every month; at Golspie on the second Tuesdays of February, April, June, and October; at Brora on the Wednesdays after these Tuesdays; and at Helmsdale on the Thursdays after. The County Council is composed of 20 members, comprising 19 for as many electoral divisions and 1 for the burgh of Dornoch. The police force consists of 17 men (1 to every 1288 of the population), under a chief constable with a salary of £220 a year. The prison at Dornoch was discontinued in 1880. The average number of registered poor in 1892 was 738, with 211 dependants. All the parishes are assessed, and they unite to form a poor-law combination with a poor-house at Bonar-Bridge. The proportion of illegitimate births averages about 5.9 per cent., and the death-rate is about 17.4. Markets are held at Dornoch, Clashmore, Farr, Golspie, Helmsdale, Inchadamff, and Kyle of Sutherland. There are artillery and rifle volunteers connected with the county. Valuation (1874) £2266, (1815) £33,878, (1860) £52,379, (1870) £62,629, (1880) £96,273, (1885) £99,124, (1893) £99,374, inclusive of railway. Pop. of registration county (1871) 22,298, (1881) 22,376, (1891) 21,003; of civil county (1801) 23,117, (1811) 23,629, (1821) 23,840, (1831) 25,518, (1841) 24,782, (1851) 25,793, (1861) 25,246, (1871) 24,317, (1881) 23,370, (1891) 21,896, of whom 10,395 were males and 11,501 were females. These were distributed into 5109 families occupying 4718 houses, with 18,570 rooms, an average of 1.15 persons to each room. Of the 21,896 inhabitants, 383 males and 113 females were connected with the civil or military services or with professions, 49 men and 1044 women were domestic servants, 303 men and 5 women were connected with commerce, 4423 men and 670 women were connected with agriculture and fishing, and 1516 men and 243 women were engaged in industrial occupations. Of those engaged in agriculture and fishing 3037 men and 650 women were employed in farming alone, while there were 2260 boys and 2287 girls of school age.

The territory now forming the county of Sutherland was held by the Scandinavians along with Caithness, but not so firmly nor so long, one result being that far more Celtic place-names have survived in Sutherland.

The antiquities—the most important of which are the numerous Pictish towers or brochs—and also the events of historical importance, will be found noticed in connection with the parishes. After the North passed finally into the hands of the Scottish kings, the district became a thanedom, and was granted in the end of the 12th century to Hugh Freskin, son of that Freskin de Moravia who had obtained a grant of the lands of Duffus from King David I. Hugh's son William was created Earl of Sutherland by King Alexander II. about 1223, and the title descended in the direct male line till the death of John, the ninth earl, in 1514. He was succeeded by his sister, who was married to the second son of the Earl of Huntly, and her husband, becoming Earl of Sutherland in right of his wife, was the founder of a new line of earls who were Gordons. In 1766 this line again ended in an heiress, who in 1785 married George Granville Leveson Gower, second Marquess of Stafford, who was created Duke of Sutherland in 1833. The Duchess-Countess, who died in 1839, was succeeded by her son, who died in 1861. His grandson, Cromartie Sutherland Leveson Gower (b. 1851; suc. 1892), is the present and fourth Duke. The seats are DUNROBIN Castle and Tongue House.

See James Macdonald, 'On the Agriculture of Sutherland,' in *Trans. Highl. and Ag. Soc.* (1880); C. W. G. St John, *A Tour in Sutherlandshire* (2 vols. 1849; new ed. 1884); Sir Robert Gordon, *Genealogical History of the Earldom of Sutherland* (1813); A. Young, *Angler's and Sketcher's Guide to Sutherland* (1880); Bishop Pococke's *Tour in 1760 in Sutherland and Caithness* (1888); and J. E. Edwards Moss's *Season in Sutherland* (1888).

Sutherland and Caithness, a synod of the Established Church, comprehending the presbyteries of DORNOCH, TONGUE, and CAITHNESS. It meets at Helmsdale on the second Wednesday of April. The Free Church has also a synod, embracing the same presbyteries, and meeting at Lairg, Wick, and Thurso in regular rotation on the second Wednesday of April, and occasionally at Dornoch, Golspie, and Helmsdale.

Sutherland Railway. See HIGHLAND RAILWAY.

Sutors of Cromarty. See CROMARTY.

Swana. See SWONA.

Sweetheart Abbey. See NEWABDEY.

Swen's Stone. See FORRES.

Swindrigemuir, a plain two-storey mansion in Dalry parish, Ayrshire, 2 miles ENE of the town. It was built about 1830 by Jn. Smith, Esq. (1754-1838), whose great-grandfather had acquired the estate about the year 1700, and whose great-nephew was Brigadier-General Jas. Geo. Smith-Neill (1810-57), a hero of the Indian Mutiny. (See AYE.) His son, Wm. James Smith-Neill, Esq. (b. 1837; suc. 1857), is present proprietor.—*Ord. Sur.*, sh. 22, 1865. See A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1885).

Swiney House, a mansion in Latheron parish, Caithness, 1½ mile WSW of Lybster.

Swin, Loch, an inlet of the sea, on the coast of Argyllshire, opposite the island of Jura, 9½ miles long, and from 5 furlongs to 2 miles broad. It runs up north-north-eastward, in a line slightly divergent from that of the coast, so as to enclose a long and very slender peninsula; and it flings out several long, narrow arms, in lines nearly parallel to its own direction, so as to peninsulate various belts of hill-ground on its coasts. At its entrance lies a cluster of islets, on one of which are well-preserved remains of an ancient chapel and vaulted cell, with an elegant and curiously sculptured sarcophagus. A series of abrupt and lofty hills encompasses the loch; and they terminate in rocky and deeply indented shores, and, over much of their declivity, are richly wooded. The scenery is striking and full of character. On the E shore, 2 miles from the entrance, stand the fine ruins of CASTLE-SWIN.

Swinna. See SWONA.

Swinton, a village and a parish in the Merse district, SE Berwickshire. The village stands, 190 feet above sea-level, near the left bank of Leet Water, 6½ miles N by W of Coldstream and 5½ SE by S of Duns, under

which it has a post office, with money order and savings bank departments. Built round a large green, whereon stands an ancient cross, it presents a pleasant appearance, and has a reading-room and library, a horticultural society, curling, football, and quoiting clubs, a hotel, and several shops; but its two fairs, on the third Thursday of June and the fourth Tuesday of Oct., have long been obsolete. Pop. of village (1831) 450, (1861) 431, (1871) 456, (1881) 434, (1891) 371.

The parish, since 1761 comprehending the ancient parish of Simprin, is bounded N by Edrom and Whitsome, E and SE by Ladykirk, S by Coldstream, W by Eccles, and NW by Fogo. Its utmost length, from E to W, is 4 miles; its utmost width is 3 miles; and its area is 5571½ acres, of which 11 are water. LEET WATER, entering from Whitsome, flows 3½ miles south-westward through the interior, and 5½ furlongs south-by-westward along the Eccles border, till it passes off on its way to the Tweed at Coldstream. The surface is a series of gentle ridgy elevations, ranging from E to W, with intervening flats, at no point sinking much below 170, and at none exceeding 274, feet above sea-level. New Red Sandstone is the predominant rock, and has been largely quarried. The soil in general is clayey, deep, and fertile. Nearly all the land, except some 25 acres under wood, is regularly or occasionally in tillage. For upwards of 750 years the lands of Swinton were held by the Swintons, this family having acquired them as a reward for clearing the country of wild boars or swine; hence the name. Edulf de Swinton received from Malcolm Canannor (1058-93) a charter—one of the earliest granted in Scotland—confirming to him the entire parish of Swinton. Among his descendants were Sir John Swinton, to whom Fordun ascribes the victory of Otterburn (1388), and who fell fighting bravely at Homildon Hill (1402); Sir John, his son, who unhorsed and slew the Duke of Clarence, Henry V.'s brother, at the battle of Beaugé (1421), and himself fell at Verneuil (1424); Alexander, the 'fanatic judge,' Lord Mersington, who headed the riotous attack on the Chapel Royal of Holyrood (1688); and John, likewise a lord of session by the title of Lord Swinton, who died in 1799. The estate now belongs to John Maenab, Esq. Swinton House, 1½ mile WSW of the village, is an elegant modern mansion, successor to one of great antiquity. Simprin was long the property of the Cockburns of Langton, who sold it in 1758. Swinton is in the presbytery of Chirnside and the synod of Merse and Teviotdale; the living is worth £345. Thomas Boston (1676-1732), author of the *Fourfold State*, was minister of Simprin from 1699 until his translation to Ettrick in 1707. The session register during these eight years is wholly in his handwriting, and is still preserved; but the little church, near the southern border of the united parish, has long since fallen to decay. Swinton parish church, at the village, was built in 1729, and, as enlarged by an aisle in 1732, contains 366 sittings. A beautiful Free church (1860) contains 550 sittings; and a handsome public school, erected in 1877 at a cost of £2000, with accommodation for 221 children, had (1893) an average attendance of 124, and a grant of £122, 3s. 6d. Pop. (1801) 875, (1841) 1095, (1861) 964, (1871) 996, (1881) 964, (1891) 849. See Campbell Swinton's *Swintons of that Ilk* (1883).—*Ord. Sur.*, sh. 26, 1864.

Swinton, a village in Old Monkland parish, Lanarkshire, ½ mile N of Baillieston, and 6 miles E of Glasgow. **Swinton Bank**, a mansion in Peebles parish, Peeblesshire, 1 mile N of the town.

Swona, an island of South Ronaldshay parish, Orkney, at the entrance of Scapa-Flow from the Pentland Firth, 2½ miles W by S of Barth Head in South Ronaldshay island, and 3½ miles SE of Cantick Head in Walls. It measures 1½ mile in length, and 3½ furlongs in extreme breadth; is strongly swept by the tidal currents of the Pentland Firth; and gives the name of Wells of Swona to whirlpools in its vicinity. Pop. (1861) 46, (1871) 47, (1881) 47, (1891) 42.

Swordie, a village in Stornoway parish, Outer Hebrides, Ross and Cromarty, adjacent to Knock village,

and 6 miles ESE of the town of Stornoway. Pop., with Knock, (1871) 408, (1881) 496, (1891) 579.

Sydenham, a mansion in Kelso parish, Roxburghshire, 2 miles N of the town. Its owner is Sir John Poynder Dickson Poynder, sixth Bart. since 1802 (b. 1866; suc. 1884).—*Ord. Sur.*, sh. 25, 1865.

Symbister, a fishing village at the SW extremity of Whalsey island, off the E coast of the Mainland of Shetland. Under the Highlands and Islands Act, breakwater works in connection with the formation of a fishing-boat shelter here were undertaken in 1894, a Treasury grant of £1650 having been procured for the purpose. See WHALSEY.

Symington, a village and a parish in the NW of Kyle district, Ayrshire. The village stands 3½ miles NNE of Monkton station on the Glasgow and South-Western railway, and 6 SSW of Kilmarnock, under which it has a post office.

The parish is bounded NE by Riccarton, E by Craigie, S and SW by Monkton, and W and NW by Dundonald. Its utmost length, from NNE to SSW, is 4½ miles; its breadth varies between 1 and 2½ miles; and its area is 3736½ acres, of which 11½ are water. In the extreme S the surface declines to close on 100 feet above sea-level; and thence it rises gently to a maximum altitude of 333 feet at a point 2½ furlongs NNE of the church, from which it sinks again to 201 feet near the Riccarton border. It thus exhibits a pleasing diversity of swells and slopes, and contains many vantage grounds commanding extensive views of great part of Ayrshire, the Firth of Clyde, and the Isle of Arran. The road from Kilmarnock to Ayr runs through the parish from NE to SW. Trap rock has been quarried for road metal, and sandstone for building; whilst limestone and coal exist, but not under profitable conditions. The soil, in general, is of a clayey character, on a hard subsoil. Nearly all the land, except about 300 acres under wood, is regularly or occasionally in tillage. The principal residences are Coodham, Dankeith, Rosemount, and Townend. Symington is in the presbytery of Ayr and the synod of Glasgow and Ayr; the living is worth £287. The parish church is an old building with Norman features, and as entirely remodelled in 1880 contains 359 sittings. There is also a Free church; and the public school, with accommodation for 132 children, had (1893) an average attendance of 66, and a grant of £62, 3s. Valuation (1885) £7104, 5s. 3d., (1894) £6865, 10s. 8d. Pop. (1801) 668, (1841) 918, (1861) 855, (1871) 792, (1881) 697, (1891) 621.—*Ord. Sur.*, sh. 22, 14, 1865-63.

Symington, a small Clydesdale parish in the Upper Ward of Lanarkshire, containing, at its NW border, Symington Junction on the Caledonian railway, 6½ miles SSE of Carstairs, 19 W by S of Peebles, and 3½ WSW of Biggar, under which there is a post office. It is bounded NW by Covington, N by Libberton and Biggar, E by Culter, SE by Lamington, and SW by Wiston. Its utmost length, from ENE to WSW, is 4½ miles; its utmost breadth is 2½ miles; and its area is 5½ square miles or 3549½ acres, of which 46 are water. The CLYDE winds 6½ miles north-north-eastward and north-westward along or close to all the Lamington, Culter, Biggar, and Libberton boundary, though the point where it first touches and that where it quits the parish are only 3½ miles distant as the crow flies; and two little affluents of the Clyde, Lanimer and Kirk Burns, trace most of the south-western and north-western boundaries. In the N, beside the Clyde, the surface declines to close on 650 feet above sea-level; and thence it rises to 754 feet near Annieston, 354 at the Castle Hill, 1261 at Wee Hill, 1925 at Scout Hill, and 2335 at Tinto, which culminates just on the meeting point of Symington, Wiston, Carmichael, and Covington parishes. The rocks are variously Devonian, Silurian, and eruptive; and the soil ranges from fertile alluvium on the level lands fringing the Clyde to moorish earth on the hills. According to the Ordnance Survey, 2274 acres are arable, 193 under wood, 674 moorland, and 249 rough pasture. FATLIPS CASTLE, the chief antiquity, is noticed separately; on the Castle

Hill, $\frac{1}{2}$ mile SW of the village, are vestiges of an earth-work rampart; and at Annieston is a ruinous tower. The parish derived its name from Symon Loccard, progenitor of the Lockharts of Lee, who appears to have founded its church between 1153 and 1165; and from early in the 14th till towards the middle of the 17th century the barony was held by the Symingtons of that ilk. Symington is in the presbytery of Biggar and the synod of Lothian and Tweeddale; the living is worth £175. The parish church, near Symington village, $\frac{3}{4}$ mile SE of the station, is an old building, repeatedly repaired, and containing 200 sittings. The public school, with accommodation for 102 children, had (1893)

an average attendance of 69, and a grant of £78, 7s. There is a parish library and a curling club. Valuation (1885) £6558, 9s., (1893) £5381, 17s. Pop. (1801) 308, (1831) 489, (1861) 528, (1871) 442, (1881) 462, (1891) 482.—*Ord. Sur.*, shs. 23, 24, 1865-64.

Symington House, a modern mansion in Stow parish, Edinburghshire, on the W side of Gala Water, $3\frac{1}{2}$ miles NNW of Stow village.

Synniness, a ruined castle near the coast of Old Luce parish, in Luce Bay, Wigtownshire, 3 miles SSE of Glenluce. It was built by Archibald Kennedy towards the close of the 16th century.

Syster, Loch. See DUNNET.

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TARNER, a triangular islet ($\frac{1}{2} \times \frac{1}{4}$ mile; 218 feet high) of Bracadale parish, Isle of Skye, Invernessshire, in Loch Bracadale, 5 furlongs from the shore.

Tain (Scand. *Thing*, 'a place of assembly'), a town and a parish of NE Ross and Cromarty. A royal, parliamentary, and police burgh, the town stands 3 furlongs from the southern shore of the Dornoch Firth, and has a station on the Highland railway (1864), $25\frac{1}{2}$ miles NE of Dingwall and 44 NNE of Inverness. Extending $\frac{1}{2}$ mile north-westward along the ancient sea-margin of the firth, it has pleasant environs of hill and brae, terrace and down; and, though irregularly aligned, has undergone such improvement of recent years as to contain a number of good modern houses, and to present a remarkably tidy appearance. The Gaelic name of Tain is *Baile Dhuithaich*, or 'Duthus' town,' after St Duthus or Duthac, a famous Saint styled 'Confessor of Ireland and Scotland,' and supposed (probably erroneously) to have been Bishop of Ross, who was born at the site of St Duthus' Chapel, Tain, about the year 1000, and died in 1065 at Armagh in Ireland, whence his body was 'translated' to Tain for burial in 1253. A rude granite chapel 'quhair he was borne,' now roofless and partly broken down, bears his name, and was of old a famous 'girth' or sanctuary. Hither, in 1306, Isabella, queen of Robert the Bruce, his daughter Marjory, and ladies of his court with attendant knights, fled for safety from Kildrumny Castle, but were seized at the chapel by the Earl of Ross, and delivered by him to Edward I. of England, who imprisoned the ladies and executed their male attendants. Hither, also, in 1427, M'Neill of Creich (Sutherland), a barbarous chief, pursued Mowat of Freswick (Caithness), and burned the chapel over him and his followers, who had taken refuge in it. It was probably on that occasion that the earlier charters of the burgh had been burnt 'by certain savages and rebellious subjects,' as stated in a charter of Novodamus, granted by James VI. in 1587. It is probable that several of the earliest Scottish monarchs visited the shrine of St Duthus; and after the death of James III., an annual sum was paid to its chaplains from the royal treasury to say masses for the king's soul. But it is certain (from entries of disbursements in the king's treasurer's books) that James IV. visited it regularly every year, probably without the omission of one, during at least 20 successive years from 1493 to 1513, to do penance for the part which he took in reference to his father's death. His last visit was made early in August 1513, and on 9th September of the same year he was killed on the fatal field of Flodden. Again, in 1527 James V. made a pilgrimage barefooted to it at the instigation of his popish advisers, who wished to get him out of the way when they were about to condemn and burn for heresy his near relative Patrick Hamilton, the first martyr of the Scottish Reformation. A rough foot-path across the moor in the uplands of the parish is traditionally pointed out as the hastily-constructed route by which he approached, and still bears the name of the King's Causeway. The grounds around the chapel have

been recently enclosed by a handsome parapet wall and railing, and formed into a very pretty cemetery. The collegiate church of St Duthus, in the Decorated English Gothic style, was founded about the year 1360, and there are beside it the walls of an old chapel, probably of Culdee origin. In 1487 Pope Innocent VIII. granted the church an ecclesiastical constitution. The Papal Bull is still treasured in the archives of the burgh, and has a leaden seal attached to a silken cord. The officials were a provost, 5 canons (all regular priests), 2 deacons or subdeacons, a sacrist, with an assistant clerk, and three singing-boys. From the Reformation till 1815 it was used as the parish church, but being too small to contain the parishioners it was in that year relinquished for the present large parish church, and thereafter was allowed to fall into great decay by neglect. At the instance of the late Provost M'Leod and his son, A. B. M'Queen M'Intosh, Esq. of Hardington (son of Rev. Dr Angus M'Intosh, during whose ministry the church was vacated), Kenneth Murray, Esq. of Geanies, Provost Vass, and others, the church was completely restored between 1849 and 1882 at a cost of about £1110; and, set apart for monumental and memorial purposes—the Valhalla of Ross-shire—it has been entrusted to the Tain Guildry Trust for care and preservation. It may be remarked that its fine old oak pulpit was a gift from the 'good Regent' Murray to Tain for its zeal in the Reformation. The church stands beautifully on the N side of the town on a wooded knoll, by whose trees it is embosomed. All its five principal windows are filled in with stained-glass designs. The five-light E window is on a grand scale, and is the gift of Mr A. B. M'Queen M'Intosh, in memory of his father, Rev. Dr Angus M'Intosh, and his brother; Rev. Dr C. C. M'Intosh, ministers of Tain; and the four-light W window, representing the adoption of the Confession of Faith by the Scottish Parliament in 1560, is the gift of Mr George M'Leod, in memory of his father, Provost M'Leod. A third window represents Malcolm Canannmor, with his good Queen Margaret, handing the burgh's first charter to the provost and magistrates. Underneath the E window there is a most beautiful double pannelled monument 16 feet long by $7\frac{1}{2}$ high, in the Gothic style of the 16th century, which is of Scottish national interest. It commemorates Patrick Hamilton—of royal extraction—the youthful Abbot of Fearn, who was burned at the stake at St Andrews, 28 February 1528, the first martyr of the Reformation; and Thomas Hog, the Covenanting minister of Kiltarn, one of Tain's most honoured sons, and the intimate friend and adviser in Scottish affairs of William III., Prince of Orange. Opening into the churchyard in which the church stands, a very handsome ornamental gate was erected in 1885 in memory of the late William Ross, bank agent, Tain.

A court house, erected in 1825, was burned to the ground in 1833, when three lives were lost; but in 1849 it was succeeded by a handsome pinnacled edifice in the Scottish Baronial style, which, with additions made in 1873, cost about £3000. Immediately adjoining it is an ancient square tower, formerly the prison, which is

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a fine massive erection with a completely foreign air, and which has been utilised to form a handsome entrance to the court house. It has a central conical spire, and a smaller one at each angle. It has also a fine weather-cock, and a sweet-toned bell, founded in Holland in 1616. In 1706 the General Assembly of the Church of Scotland ordered a collection to be made over the whole church for the building (repairing?) of 'the Tolbooth of Tain,' but with what result, and whether it was for this Prison Tower, is unknown (*Church of Scotland Magazine*, 1834). A market-cross formerly stood in front of the tower, and was surmounted by a lion rampant, the crest of the Earls of Ross. A public hall, French Renaissance in style, was erected in 1875-76 at a cost of £2500, and contains accommodation for nearly 600 people. In 1879 a very handsome monument, 44 feet high, in the Decorated Gothic style, by Mr Laurence Beveridge, of Edinburgh, was erected at a cost of £700 to the memory of the late Kenneth Murray, Esq. of Geanies, of whom there is a fine marble bust by Mr T. S. Burnett, Edinburgh, under its central arch. The present parish church, built in 1815, is a square battlemented structure, with 1200 sittings and a heavy tower at each of the four angles. The Free church, erected in 1892 at a cost of £5200, is a splendid building in the Italian style of architecture, and has a tower rising to the height of 115 feet. Other places of worship are a U.P. church (entirely remodelled in 1879; 350 sittings), and an Episcopal church. The latter was erected in 1887, and is an Early English structure with a high-pitched roof, porch, vestry, and spire, and contains 104 sittings. The Academy, constituted by royal charter in 1809, and built by subscription in 1812, is a handsome and spacious edifice, pleasantly situated in a park of nearly 3 acres at the W end of the town, and is managed under a scheme drawn up by the Educational Endowment Commissioners in 1888. It is conducted by a rector, mathematical, classical, and English masters, two female assistants, and a female teacher of music and drawing; and has a yearly endowment of upwards of £300. A university bursary, with a capital fund of £930, was founded in connection with it in 1879, in memory of Kenneth Murray, Esq. of Geanies. The Easter Ross Poorhouse, 7 furlongs SSW of the town, is a high-roofed building, erected in 1848, and having accommodation for 176 paupers. Tain has besides a post office, with money order, savings bank, and telegraph departments, branches of the Bank of Scotland, the Commercial, British Linen Co., North of Scotland, and National Security Savings Banks, a gaswork, several hotels, a horticultural society, golf, curling, cricket, football, cycling, lawn-tennis, boating and touring clubs, Tain Highland Gathering, a volunteer corps, masonic, Oddfellows', and Good Templar lodges, a Young Men's Mutual Improvement Association, a Christian Association, a musical society, a news-room, a fortnightly Friday grain market, and fairs on the Wednesday after the second Tuesday of July, the Wednesday after the third Tuesday of August, and the third Tuesday of October. In the neighbourhood are Glenmorangie Distillery and Hilton Woollen Mills, the former $1\frac{3}{4}$ mile NW, the latter $1\frac{1}{2}$ mile SE, of the town. Tain has spacious links, affording great scope for recreation. Near its centre is the 'Gallows Hill' (the magistrates in ancient times had the power of 'pit and gallows'); and at its S end is a large skating-pond, formed in 1882. As the sea had, during the preceding century, been making rapid and severe inroads upon it, it was protected by a strong rough bulwark of boulder stones. In the neighbourhood of the links, and near the railway station, were erected (about 1878) a large wood and meal mill; an extensive storehouse for corn, coals, manures, &c. (1885), at a cost of £1400; and a public shambles (1885), in the Lombardic style, at a cost of £800. A copious supply of excellent spring water was introduced to the town in 1871 from a distance of 4 miles, at a cost of £4200, and is distributed free; and £2000 was expended in 1877-84 in a system of thorough drainage, over and above previous outlay for this purpose. The burgh enjoys a large

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common good revenue from lands, feu duties, and valuable mussel scalps and salmon fishings in the Dornoch Firth, so that the municipal rates are extremely low. The climate is dry and bracing, the rainfall being the lowest in the kingdom.

Tain is said to have been created a royal burgh by Malcolm Ceanmhor about the year 1057, but its earliest extant charter was granted by James VI. in 1587, and was ratified and extended by others of 1612 and 1671-72. It is governed by a provost, 3 bailies, a dean of guild, a treasurer, and 9 councillors. With the five other Wick burghs it returns a member to parliament. A district sheriff court sits every Wednesday during session, and a justice of peace court is held every alternate Thursday. Corporation



Seal of Tain.

revenue (1833) £314, (1865) £1181, (1884) £1024, (1892) £685. Valuation (1885) £5983, (1893) £6152. Parliamentary constituency (1893) 268; municipal, 345. Pop. of royal burgh (1841) 2287, (1861) 2319, (1881) 2221, (1891) 2080; of parliamentary and police burgh (1841) 1867, (1861) 1779, (1871) 1765, (1881) 1742, (1891) 1632, of whom 924 were females. Houses in parliamentary burgh (1891) inhabited 367, vacant 11, building 7.

The parish, containing also most of INVER village, $6\frac{1}{2}$ miles E by N of Tain, is bounded N by the Dornoch Firth, E (for 3 furlongs only) by Tarbat, SE by Fearn, S by Logie-Easter, and W by Edderton. Its utmost length, from E to W, is $8\frac{1}{2}$ miles; its utmost breadth is $4\frac{3}{4}$ miles; and its area is $33\frac{3}{4}$ square miles, or 21,606 $\frac{1}{2}$ acres, of which 269 $\frac{1}{2}$ are water, 4639 foreshore, and 30 $\frac{1}{2}$ tidal water. The coast, from end to end of the parish, has nearly the figure of a crescent, and encloses the Bay of Tain. In general low and flat, nowhere rising to a greater altitude than 30 feet, it is sandy, curved, and indented; and, suffering constant erosion from the sea, may be viewed as a broken sandbank. Along the skirt of its eastern half a tract of sand, 5 furlongs to $1\frac{1}{2}$ mile broad, is alternately dry and covered with the tide. Shoals and sunken banks obstruct the whole firth opposite the parish, and render navigation quite impracticable to strangers, and but limitedly practicable to the most skilful local pilots. The chief bank, or bar, called the Geyzen-Briggs, runs from coast to coast, with the exception of a narrow and difficult channel through its middle; and, whenever northerly or easterly winds blow, or sometimes even during a calm in frosty weather, it flings up a roaring and violent surge. Several banks in the middle of the firth, 2 miles above the Geyzen-Briggs, furnish large supplies of mussels, which are a principal source of revenue to the burgh of Tain, and in 1783, during a great scarcity of food, yielded such immense quantities of mussels and cockles as, with some imported pease meal, contributed to the support of multitudes of human beings over the adjacent country. So comparatively recent has been the conquest of these banks and the adjacent sea-grounds from the solid territory both of Tain and of the opposite coast, that, in the words of the *New Statistical Account*, 'although the firth now measures $3\frac{1}{2}$ miles across, there is an (improbable) tradition, that it was at one time possible to effect a passage over it at low water upon foot, by means of a plank thrown across the channel where narrowed to a few feet' by promontories which have been worn into the long sunken bank of the Geyzen-Briggs. Meikle Ferry, a narrow promontory, extending $1\frac{1}{2}$ mile north-westward to within 5 furlongs of the opposite shore, is at the western extremity, and 4 miles distant from Tain. A small trouting stream, dignified with the name of the river Tain or Aldie Water, comes in from

the SW, and makes a circuit round the burgh to the firth. Springs of excellent water are numerous. Loch EYE ($1\frac{1}{2}$ mile $\times$ $4\frac{1}{2}$ furl.; 51 feet) lies on the Fearn boundary; and five smaller lagoons are scattered over the broad sandy golf-links of Morrich More, which skirt all the eastern seaboard. The surface of the parish consists of three well-defined districts—a belt of low flat plain along the coast, about $\frac{1}{2}$ mile in mean breadth, and partly disposed in public links or downs; a broad sheet of land, of middle character between a terrace and a hanging plain, receding from a bank or escarpment of 50 feet above the plain, and displaying rich embellishments of wood and culture; and a ridge or series of gentle uplands along the exterior frontier, sending up their loftiest summit in the Hill of Tain to an altitude of 931 feet above sea-level. The soil is variously deep and light, fertile and barren; and the hills are partly heathy, partly clad with fir timber. The formation of the lowest grounds indicates an alternation of conquests and abandonments by the sea; that of the central district shows a prevalence of red clay with numerous boulders of granitic gneiss; and that of the hills is entirely sandstone—apparently the Old Red, though principally of whitish colour. The sandstone has been largely quarried in the Hill of Tain. Tarlogie House, 2 miles NW of Tain, was built in 1825 at a cost of £1750. Its owner is J. G. Macgregor, Esq. of Fearn. Tain is the seat of a presbytery in the synod of Ross; the living is worth £362. Two public schools, Inver and Tain, with respective accommodation for 91 and 323 children, had (1893) an average attendance of 80 and 227, and grants of £78, 10s. and £266, 19s. Pop. (1801) 2277, (1831) 3078, (1861) 3294, (1871) 3221, (1881) 3009, (1891) 2818, of whom 1432 were Gaelic-speaking.—*Ord. Sur.*, sh. 94, 1878.

The presbytery of Tain comprises the *quoad civilia* parishes of Edderton, Fearn, Kilmuir-Easter, Kincardine, Logie-Easter, Nigg, Rosskeen, Tain, and Tarbat, and the *quoad sacra* parish of Croick. The Free Church also has a presbytery of Tain, with churches at Edderton, Fearn, Invergordon, Kilmuir-Easter, Kincardine, Logie-Easter, Nigg, Rosskeen, Tain, and Tarbat, and a preaching station at Croick. See the *History of Tain* by the Rev. William Taylor, M.A. (Tain, 1882).

Talla Water, a troutful rivulet of Tweedsmuir parish, Peeblesshire, rising at an altitude of 2300 feet at a point $\frac{1}{2}$ mile NW of Loch Skene, and running $6\frac{1}{2}$ miles north-westward, till, after a descent of 1500 feet, it falls into the Tweed near Tweedsmuir church. See GAMESHORE.—*Ord. Sur.*, sh. 16, 1864.

Talmin, a coast village and a bay in Tongue parish, Sutherland, on the west side of the Kyle of Tongue. In 1894, Government, on the recommendation of the Western Highlands and Islands Commission, having offered a grant of £3500, a pier or breakwater estimated to cost £5250 (the balance having been made up by the late Duke of Sutherland) was begun, connecting the mainland with an outlying island, and so inclosing a large water area with a depth of from 8 to 12 feet at low water, and providing protection for fishing boats. It was intended at the same time to erect a timber pier in deep water on the sheltered side of the outlying island, suitable for steamers, but for financial reasons this part of the scheme has had to be deferred.

Tanera. See SUMMER ISLES.

Tankerness Hall, a mansion in St Andrews parish, Orkney, on the northern shore of Deer Sound, 6 miles ESE of Kirkwall.

Tannach, a village in Wick parish, Caithness, 4 miles SW of Wick town.

Tannachy, an estate, with a mansion, in Rathven parish, Banffshire, 1 mile SSW of Port-Gordon.

Tannadice, a village and a parish of NW central Forfarshire. The village stands, 208 feet above sea-level, on the left bank of the river South Esk, $8\frac{1}{2}$ miles WSW of Brechin and 7 N by E of Forfar, under which it has a post office.

The parish is bounded N by Lethnot, E by Fearn and Careston, SE by Aberlemno, S by Oathlaw, SW by

Kirriemuir, and W and NW by Cortachy. Its utmost length, from N to S, is $8\frac{1}{2}$ miles; its breadth increases southward from $2\frac{1}{2}$ to 8 miles; and its area is 21,452 $\frac{1}{2}$ acres, of which 124 $\frac{1}{2}$ are water. The Brechin and Forfar railway (opened Aug. 1894) runs through the eastern part of the parish, and has a station near the village of Tannadice. Trusty Burn, rising at an altitude of 2160 feet in the NW corner of the parish, and running 3 miles south-south-eastward, unites, at 890 feet above sea-level, with another rivulet to form NORAN WATER, which itself flows $4\frac{1}{2}$ miles south-south-eastward through the interior and then $4\frac{1}{2}$ miles east-south-eastward along the Fearn boundary, until it passes off from Tannadice at a point $1\frac{1}{2}$ mile above its influx to the South Esk. That river has here an east-south-easterly course of 11 miles, viz., $6\frac{1}{2}$ miles along the western and south-western border, next $3\frac{1}{2}$ miles through the southern interior, then 5 furlongs along the Oathlaw boundary at Tannadice House, and lastly, a little lower down, $\frac{1}{2}$ mile along the same boundary at Marcus Lodge. The East Burn of Moye runs 5 miles south-south-westward along the north-western border to the South Esk, to which or to Noran Water flow several rivulets that rise in the interior. In the SE the surface declines to 140 feet above sea-level; and thence it rises to 415 feet at Meikle Coul, 889 near Newmill of Inchewan, 1611 at St Arnold's Seat, 1682 at Pinderachy on the Fearn boundary, and 2383 at the Hill of Glansie on the Lethnot boundary. The southern district is part of the rich and beautiful territory of Strathmore, but is more undulated and otherwise diversified than many other parts of the strath. The central and northern districts rise in hilly and undulating ridges to the lower acclivities of the Grampians; and St Arnold's Seat, a conspicuous hill in the van of the range, commands a gorgeous view of all Angus and Fife and most of the Lothians, away to the Pentlands and the Lammermuirs. The uplands are to a large extent heathy and almost wholly pastoral; and they maintain several hundreds of sheep. Only a few cattle are bred, a large number being bought in a fed condition every year. Except for a trap dyke extending across the entire breadth of the parish, Old Red Sandstone is everywhere the predominant rock. Of a coarse grain and a reddish hue, it is quarried chiefly for building fences. The soil is partly a fertile black loam, partly thin and of moorish texture. Within the last forty-five years great improvements have been carried out in the way of draining, fencing, and building, especially on the Tannadice estate, which was purchased from Mrs Balfour Ogilvy in 1870 by William Neish, Esq. The mansion, Tannadice House, 7 furlongs ESE of the village, and built about 1805, was burnt down in April 1894. Other mansions, noticed separately, are DOWNIE PARK, GLENOGIL, and INCHEWAN. On the N side of the Esk, near Shielhill Bridge, anciently stood Quiech Castle, a seat of the Earls of Buchan. The site, now without a vestige of the castle, and occupied by a plain cottage, is a precipitous rock, looking sheer down, through deep and yawning chasms, upon a rush and turbulence of water, and almost isolated and rendered nearly inaccessible by the river. In the vicinity of Achlouchrie is the site of another ancient castle, an eminence which still bears the name of Castle Hill, and overhangs a deep gorge of the river, having round its base a semicircular fosse 12 feet deep and 30 wide. Three conical 'laws,' or ancient sepulchral tumuli, were levelled in the early part of the 19th century. Tannadice is in the presbytery of Forfar and the synod of Angus and Mearns; the living is worth £186. The parish church, at the village, is a Gothic edifice of 1846, containing 656 sittings. A Free church, Memus, stands $3\frac{1}{2}$ miles W by N of the village and $5\frac{1}{2}$ NE of Kirriemuir. Three public schools—Burnside of Inchewan, Denside, and Tannadice—with respective accommodation for 67, 75, and 132 children, had (1898) an average attendance of 37, 43, and 72, and grants of £51, 16s., £58, 0s. 6d., and £72, 1s. 6d. Valuation (1885) £14,883, 7s., (1898) £13,921, 8s. Pop. (1801) 1373, (1841) 1654, (1861) 1438, (1871)

1286, (1881) 1254, (1891) 1117.—*Ord. Sur.*, shs. 57, 56, 1868-70.

Tanner, Water of. See ABOYNE.

Tantallon Castle, an ancient ruin on the coast of North Berwick parish, Haddingtonshire, 3 miles E of the town. It stands, fronting the Bass, on a lofty precipitous rock, whose base is washed on three sides by the sea; and on the SW side, where alone it is accessible, it was defended by two ditches of extraordinary depth, and by very massive towers. The entrance was over a drawbridge, through a strong, deep stone gateway. The castle itself, though roofless, in its outer structure is still comparatively entire, and was repaired in 1887. Its interior is a maze of broken staircases, ruined chambers, and deep, dismal subterranean dungeons. So strong was the castle in position, and so skilful in construction, that previous to the invention of gunpowder, it was regarded as impregnable, inasmuch that to 'ding down Tantallon' was thought the same kind of feat as to 'big a brig to the Bass.' Sir Walter Scott, in *Marmion*, thus finely describes its former condition:—

'Tantallon vast,
Broad, massive, high, and stretching far,
And held impregnable in war.
On a projecting rock it rose,
And round three sides the ocean flows,
The fourth did battled walls enclose,
And double mound and fosse;
By narrow drawbridge, outworks strong,
Through studded gates, an entrance long,
To the main court they cross.
It was a wide and stately square;
Around were lodgings fit and fair,
And towers of various form,
Which on the coast projected far,
And broke its lines quadrangular;
Here was square keep, there turret high,
Or pinnacle that sought the sky,
Whence oft the warder could descry
The gathering ocean-storm.'

The date of the castle and the circumstances of its erection are unknown. It comes into notice with the rising fortunes of the family of Douglas, who obtained the barony of North Berwick about the year 1371, and whose emblem of the bloody heart crumbles on the stone shield above the entrance. In 1479, 24 years after the Douglas forfeiture, Archibald, fifth Earl of Angus—the well-known 'Bell-the-cat'—received a grant of it from James III.; and he afterwards so figured in connection with it as to have furnished subjects for some of Scott's most graphic delineations. The next Earl of Angus, after he had married the queen-mother of James V., and lost influence over the person and councils of that young monarch, shut himself up in Tantallon, and defied for a time the whole hostile force of the kingdom. The monarch went in person to reduce it, sat down before it in September 1528, and borrowed from the Castle of Dunbar, to aid him in his operations, two great cannons, called 'Thrawn-mouth'd Meg and her Marrow,' also 'two great bocards and two moyons, two double falcons and four quarter-falcons,' for the safe redelivery of which to their owner, the Duke of Albany, three lords were left in pledge at Dunbar. Yet, in spite of his great preparations and formidable efforts, James was compelled to raise the siege; and he afterwards obtained possession of it only by Angus' fleeing to England, and by a compromise with Simon Panango, the governor. After James V.'s death, the Earl obtained leave to return from his exile; in 1543 he was restored to his possessions, and began to make Tantallon stronger than before; and here he died in 1556. In 1639, the Covenanters, provoked at his lord, the Marquis of Douglas, making a stand in it for kingcraft and prelacy, at length 'dang down Tantallon,' and even garrisoned it against the King, while in 1659 General Monk further contributed to its destruction. About the beginning of the 18th century, Sir Hew Dalrymple, president of the Court of Session, bought the castle, along with the circumjacent barony, from the Duke of Douglas, dismantled it, and gave it up to decay. On 26 Aug. 1878 the Queen, Prince Leopold, and the Princess Beatrice drove over from Broxmouth to Tantallon,

which was, Major tells us, the birthplace of Gawin Douglas (1474-1522), the poet-bishop of Dunkeld. According to Hugh Miller, time is wearing away the very stones of which the building is composed, the hewn surfaces, under climatic influences, having been hollowed like pieces of honeycomb.—*Ord. Sur.*, sh. 41, 1867. See vol. iv. of Billings' *Baronial Antiquities* (1852) and the works cited under the Bass.

Taransay, an island of Harris parish, Outer Hebrides, Inverness-shire, off the entrance of West Loch Tarbat, $\frac{1}{2}$ mile W of Harris mainland, and $\frac{3}{4}$ miles NE of Toe Head, at the N side of the W entrance of the Sound of Harris. It measures $4\frac{1}{2}$ miles in length from NE to SW, and 3 miles in extreme breadth; comprises two peninsulated hills, 750 feet high, and a connecting narrow sandy isthmus; consists mainly of gneiss rock, traversed by veins of granite, and very scantily covered with soil; and affords to its inhabitants little means of support except facilities for fishing. Pop. (1861) 55, (1871) 68, (1881) 55, (1891) 56.

Tarbat (Gael. *tairbeart*, 'an isthmus'), a coast parish in the north-eastern extremity of Ross and Cromarty, containing the post-office and fishing village of PORTMAHOMACK, $9\frac{1}{2}$ miles ENE of Tain and 9 NE of Fearn station, on the Highland railway. Containing also ROCKFIELD and a small portion of INVER, it is bounded NW by the Dornoch Firth, SE by the Moray Firth, S by Fearn, and W by Fearn and—for 3 furlongs—Tain. Its utmost length, from NNE to SSW, is $7\frac{3}{4}$ miles; its utmost breadth is $3\frac{1}{4}$ miles; and its area is 7660 $\frac{1}{2}$ acres, of which 7 are water, 818 foreshore, and 49 tidal water. The coast, extending $7\frac{1}{2}$ miles east-north-eastward and north-north-eastward along the Dornoch Firth, and $6\frac{3}{4}$ south-south-westward along the Moray Firth, to the latter presents a bold, rock-bound front, which, S of Rockfield, rises rapidly to heights of 100 and 200 feet above sea-level. Along the Dornoch Firth it is not so steep, and at Inver is fringed with foreshore 7 furlongs in breadth. Tarbat Ness, 50 feet high, and 3 miles NNE of Portmahomack, is crowned by an elegant lighthouse, erected in 1830 at a cost of £9361, and altered in 1892. The light, which is visible at a distance of 18 nautical miles, is quick-flashing, showing six flashes in succession during fifteen seconds, followed by an eclipse of fifteen seconds. At various points are six natural harbours and a number of small creeks; and several curious caverns pierce the south-eastern coast. The predominant rock is Old Red Sandstone; but the small vein of limestone, that runs from the North Sutor to Tarbat Ness, crops out at Geanies. The soil is generally light and sandy, but in some parts gives place to a deep, black loam. The great improvements carried out on the Geanies estate by the late Mr Kenneth Murray have already been described in the article FEARN. Antiquities, other than those noticed under BALONE and CASTLEHAVEN, are some so-called 'Roman' remains on Tarbat Ness, a 'Gallow Hill,' sites or vestiges of three pre-Reformation chapels, and in the churchyard, the 'Dingwall's Tomb' and fragments of a 'Danish' cross. Geanies House is the only mansion. Tarbat is in the presbytery of Tain and the synod of Ross; the living is worth £280. Both the parish church and a Free church stand close to Portmahomack. Two public schools, Old and West, with respective accommodation for 289 and 68 children, had (1893) an average attendance of 186 and 43, and grants of £245, 0s. 6d. and £51, 13s. 6d. Pop. (1801) 1343, (1831) 1809, (1861) 2269, (1871) 2182, (1881) 1878, (1891) 1703, of whom 947 were Gaelic-speaking.—*Ord. Sur.*, sh. 94, 1878.

Tarbat House, a mansion in Kilmuir-Easter parish, Ross and Cromarty, near the NW side of Nigg Bay, and 7 furlongs SSE of Kildary station on the Highland railway. It was built by John, Lord Macleod, in the latter part of the 18th century, and has stately avenues and beautiful gardens. New Tarbat Castle, once the seat of the Earls of Cromarty, stood near the site of the present mansion, and was a stately, turreted edifice, which fell into dilapidation after the third Earl's for-

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feiture in 1746, and has left some remains. See CROM-ARTY.—*Ord. Sur.*, sh. 94, 1878.

Tarbert (sometimes designated *East Tarbert*), a village and small seaport in the parishes of Kilcalmonell and South Knapdale, Argyllshire, 35 miles NNE of Campbeltown and $13\frac{1}{2}$ S of Lochgilthead. It stands at the E end of the isthmus between East Loch Tarbert and West Loch Tarbert, separating the peninsula of Kintyre from the district of Knapdale. That isthmus is only $1\frac{1}{2}$ mile across, and was anciently protected by three castles—one in the centre, one at the head of the West Loch, and one on the S side of the East Loch. The ruin of the last of these castles still exists, in grouping with the village, and is the subject of curious popular traditions. The village probably arose under protection of the castle—at all events it is a place of much antiquity; and it is so situated around the head of the East Loch, with command over its natural harbour, as to have possessed from the earliest time as much commerce as the circumstances of the surrounding district could give it. The loch, projecting westward from Loch Fyne, is of small size—only 7 furlongs long, and nowhere more than $\frac{1}{2}$ mile broad. It is a curious and singularly safe and land-locked natural harbour, but is entered by so narrow and circling a passage between low ridges of naked rock, that a steamer in sailing through it appears to a stranger to be irretrievably rushing upon the crag. On its S side near the head is a steamboat quay, and both here and all over the inner space of the loch may be seen in the fishing season a very numerous fleet of herring-boats. The steamers from Glasgow to Ardrishaig and Inveraray call daily at the port, and a coach runs daily to Campbeltown and back. The village is inhabited principally by fishermen, and is the resort, during the herring fishery season, of several hundreds of fishermen from other parts. It is, however, a favourite seaside resort in summer, and a number of neat cottages have been erected. The *quoad sacra* church was erected in 1886, and the Free church in 1894. It has a post office, with money order, savings bank, and telegraph departments, four inns, a branch of the Union Bank, a public school, a Good Templar hall, and fairs for horses, etc., on the Wednesday of March and the Tuesdays of June and November before Lochgilthead, and on the last Thursday of July. Pop. of village (1861) 1254, (1871) 1484, (1881) 1629, (1891) 1775, of whom 877 were females, and 573 were in South Knapdale parish; of *g. s.* parish (1871) 1866, (1881) 2017, (1891) 2204, of whom 1399 were in Kilcalmonell and 806 in South Knapdale.—*Ord. Sur.*, sh. 29, 1873.

Tarbert, a village in Outer Hebrides. See HARRIS.

Tarbert, Loch. See JURA.

Tarbert, Loch, East and West, two sea-lochs approaching each other's heads to within $1\frac{1}{2}$ mile, and separating the peninsula of Kintyre from the district of Knapdale in Argyllshire. The East Loch has already been noticed in our article on **TARBERT**. The West Loch extends 10 miles nearly due north-north-eastward, and measures $\frac{2}{3}$ mile in mean breadth. Over all its extent it has the calm aspect of a fresh-water lake, and is picturesque and lovely. Three islets lie in it; soft and moderately high hills recede from its margins; woods and enclosures fling their images upon its waters; and a profusion of cottages, farmhouses, villas, and mansions, with the village of Whitehouse, sit upon its banks. At its head, at the village of West Tarbert, is a quay for the accommodation of the Islay steam-packet.

Tarbert, Loch, East and West, two indentations of the sea on the opposite coasts of Harris, approaching each other to within $\frac{1}{2}$ mile. (See HARRIS.) East Loch Tarbert is $5\frac{1}{2}$ miles long, and from $4\frac{1}{2}$ to nearly 2 miles broad. Forking at the head into two slender bays, it embosoms several islets, and has the considerable island of Scalpa at its entrance. West Loch Tarbert is 6 miles long, and diminishes in breadth from $4\frac{1}{2}$ miles to nearly a point; it is screened from the fierce W winds by Taransay; and it is overhung by lofty mountains, which stoop precipitously down to its margin.

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Tarbet, a hamlet in Arrochar parish, Dumbartonshire, on the western shore of Loch Lomond, $1\frac{1}{2}$ mile E by N of Arrochar village at the head of Loch Long. It has a steamboat pier and a large hotel. All the Loch Lomond steamers call at it, and many tourists pass from it across the isthmus to Arrochar, about a mile and a half broad. It stands on the road from Inveraray to Dumbarton by way of Luas. In front, on the opposite side of the loch, is Ben Lomond, while a splendid view may be had of Ben Arthur, or 'the Cobbler,' in the rear.—*Ord. Sur.*, sh. 38, 1871.

Tarbolton, a village and a parish in Kyle district, Ayrshire. The village, standing near the right bank of the Water of Fail, by road is $8\frac{1}{2}$ miles S of Kilmarnock, 7 NE by E of Ayr, and $1\frac{1}{2}$ NNW of Tarbolton station on a loop-line (1870) of the Glasgow and South-Western railway, this being $4\frac{1}{2}$ miles WSW of Mauchline Junction. Occupying a considerable area, and containing a number of neat houses, it has a post office, with money order, savings bank, and telegraph departments, several hotels, a town-house (1836), a cattle show on the Thursday before Ayr show, and a fair on the Tuesday after 11 June. A free library and reading-room, the gift of a native, the late John Lorimer, Esq., was opened in 1878. The parish church, erected in 1821 at a cost of £2500, is a good edifice, with 950 sittings, a four-dial clock, and a spire 90 feet high. There are also a Free and a U.P. church. In 1671 Tarbolton, granted to John Cunningham of Enterkine, was constituted a burgh of barony, with right to hold a weekly market. Two bailies and twelve councillors are annually elected by the householders in December. Pop. (1841) 1083, (1861) 1154, (1871) 829, (1881) 922, (1891) 917.

The parish, containing also the village of ANN-BANK, is bounded NW and NE by Craigie, E by Mauchline, SE by Stair, S by Coylton, and W by Coylton, St Quivox, and Monkton. Its utmost length, from E by N to W by S, is $6\frac{1}{2}$ miles; its utmost breadth is $5\frac{1}{2}$ miles; and its area is nearly 19 square miles or 12,141 $\frac{1}{2}$ acres, of which 82 are water. The Water of FAIL runs south-eastward across the interior to the river Ayr, which winds $9\frac{1}{2}$ miles west-south-westward along all the Stair and Coylton boundary, though the point where it first touches and that where it quits the parish are only $4\frac{1}{2}$ miles distant as the crow flies. Along the Ayr the surface declines to 195 feet above sea-level; and thence it rises gently northward to 205 feet at Commonsides, 302 at Afton Lodge, 424 at Torcoross, 575 at Skeoch, and 437 at Coldcothill. The parish is thus undulatory, comprising softly outlined ridges, all under culture except where covered with wood. The low grounds, especially along the Ayr, comprise much pleasant close scenery; and the high grounds command magnificent prospects, over land and sea, to bold and distant backgrounds. The rocks are variously Old Red Sandstone, rocks of the Carboniferous formation, and trap. Coal was worked here so early as 1497. Nearly eight-ninths of the entire area are in tillage, some 950 acres are under wood, and the rest is either meadow or morass. At Parkmoor are trenches of a reputed Roman camp, and other antiquities are noticed under FAIL and COLLSFIELD. The 'prophet,' Alexander Peden (1626-86), was schoolmaster at Tarbolton; and Dr William Ritchie, professor of divinity in Edinburgh University, who died here in 1829, was minister. In 1581, when Esmé Stuart, Lord d'Aubigny, was created Duke of Lennox, one of the titles given him was Lord Tarbolton. The self-taught sculptor, James Thom (1799-1850), of 'Tam o' Shanter' and 'Souter Johnny' fame, was born in the upper part of the parish, within a mile of Lochlee, which from 1777 to 1784 was the home of Robert Burns (1759-96). Both the village and its neighbourhood abound with reminiscences of the poet. To the Tarbolton lodge of Freemasons he addressed a well-known *Farwell*; and at Tarbolton in 1780 he started a debating society, the Bachelors' Club. His extraordinary piece, entitled *Death and Dr Horn-book*, is said to have been written with the view of burlesquing a person of the name of Wilson, who united

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the vocations of parish schoolmaster and a vendor of medicines. And at COLLSFIELD or Montgomerie, Mary Campbell, his 'Highland Mary,' was 'byreswoman' or dairymaid. Mansions are Collsfield or Montgomerie, Afton Lodge, ENTERKINE, and SMITHSTONE. Tarbolton is in the presbytery of Ayr and the synod of Glasgow and Ayr; the living is worth £411. The present parish comprises the ancient parish of Tarbolton and the larger part of the parish of Barnwell. Ancient Tarbolton was twice subjected to the monks of Fail, yet did not remain with them, but continued to be an independent rectory; and in 1429 it was erected into a prebend or canonry of Glasgow Cathedral. Barnwell, however, was a vicarage of the monks of Fail; and in 1653 it was annexed partly to Tarbolton, and partly to Craigie. Its church, which stood near an old castle of the same name, was then allowed to go to ruin. A chapel of ease was built at Annbank in 1871; and two public schools, Annbank and Tarbolton, with respective accommodation for 470 and 800 children, had (1892) an average attendance of 388 and 229, and grants of £359, 2s. and £236, 5s. Valuation (1885) £21,552, 5s. 7d., (1894) £20,972, 12s. 6d. Pop. (1801) 1766, (1831) 2274, (1861) 2669, (1871) 3219, (1881) 3599, (1891) 3586.—*Ord. Surv.*, shs. 14, 22, 1863-65.

Tarff Water, a stream of Boleskine and Abertarff parish, Inverness-shire, formed by two head-streams at an altitude of 1000 feet, and running $5\frac{1}{2}$ miles north-by-westward to Loch Ness (50 feet) at Fort Augustus.—*Ord. Surv.*, shs. 63, 73, 1873-78.

Tarff Water. See TONCLAND.

Tarfside. See LOCHLEE.

Tarf Water, a dark, troutful stream of Blair Athole parish, N Perthshire, rising close to the Inverness-shire border at an altitude of 2692 feet, and running $11\frac{1}{2}$ miles east-by-southward along a wild rocky glen, till, after a total descent of 1200 feet, it unites with a lesser stream to form the TILR. About 15 yards above the meeting of the waters was a deep and dangerous ford, Poll Tarff, whose passage by the Queen, on 9 Oct. 1861, forms the subject of a well-known picture by Carl Haag, and which now is spanned by the Bedford Memorial Bridge (1885).

Tarf, Water of, a trout-stream of Lochlee parish, N Forfarshire, rising close to the Aberdeenshire border at an altitude of 2100 feet, and running $7\frac{1}{2}$ miles south-south-eastward, till, after a descent of 1420 feet, it falls into the North Esk, $\frac{1}{2}$ mile below Tarfside village.—*Ord. Surv.*, sh. 66, 1871.

Tarland, a village and a parish of Aberdeenshire. The village, lying, 440 feet above sea-level, on the left bank of Tarland Burn, is $5\frac{1}{2}$ miles NNW of Aboyne station, 16 SW of Aboyne, and 31 W of Aberdeen. It has a post office, with money order, savings bank, and telegraph departments, under Aboyne. A burgh of barony, it has also branches of the Union and Town and County Banks, two hotels, a public hall, an agricultural association, and fairs on 5 Jan. (if a Wednesday, otherwise on the preceding Wednesday), the second and the last Wednesday of Feb., o. s., the first Wednesday of May and the Wednesday after 26 May, the Friday after St Sairs in July, the second Wednesday after first Tuesday of Oct. o. s., and 22 Nov. (if a Tuesday, otherwise on the Tuesday and Wednesday following). Pop. (1861) 316, (1871) 315, (1881) 374, (1891) 389.

The parish until 1891 comprised the ancient parishes of Tarland and Migvie, and consisted of four separate portions. The portion situated at Deskry, containing 2593 $\frac{1}{2}$ acres, and having the parish of Strathdon on the west and that of Towie on the east, was divided by the Boundary Commissioners in the above-mentioned year between these two parishes, the part of it situated on the left bank of the Deskry being transferred to Strathdon, and the remainder to Towie. The largest of the four portions, that situated at Glen Ernan, containing 8293 $\frac{1}{2}$ acres, and which was almost surrounded by Strathdon, was transferred to that parish; while the portion situated at Migvie, containing 1969 $\frac{3}{4}$ acres, was transferred to the parish of Logie-Coldstone. To the remaining

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portion, that containing Tarland village, and comprising 4719 $\frac{1}{2}$ acres, was added so much of Logie-Coldstone parish as lay to the east of the road leading from the Mill of Culfork to Tarland. This now forms the entire parish, which, it was further directed, should henceforth be known by the single name of Tarland. The reconstructed parish is bounded N by Leochel and Cushnie, E and S by Coull, SW by Logie-Coldstone, and NW by Towie. Tarland Burn drains it towards the river Dee; and its highest point is Sockaugh or Cushnie Hill (2032 feet), at the meeting-point of Tarland, Towie, and Logie-Coldstone parishes. Granite is the predominant rock, and the soil of the arable lands is clayey or loamy. Several stone cists have been found on the farm of the Meadow, but a good many cairns and stone circles have been almost wholly removed. Mansions are Tarland Lodge, Tillypronie, and Hopewell. Giving off its westernmost portion to CORGARFF *quoad sacra* parish, Tarland is in the presbytery of Kincardine O'Neil and the synod of Aberdeen; the living is worth £249. Tarland church is a good Gothic structure, built in 1870 at a cost of £2300. A spire was added in 1890, at a cost of £600, in memory of Mrs Farquharson of Conachrae. There is a Free church of Tarland; and the public school, with accommodation for 193 children, had (1893) an average attendance of 125, and a grant of £121, 15s. 6d. Pop. (1801) 922, (1831) 1074, (1861) 1246, (1871) 1275, (1881) 1173, (1891) 786; of ecclesiastical parish (1881) 1051, (1891) 995.—*Ord. Surv.*, shs. 76, 75, 1874-76.

Tarlogie. See TAIN.

Tarransay. See TARRANSAY.

Tarras Water, a trout-stream of Eskdale, E Dumfriesshire, rising at an altitude of 1748 feet on Harts-garth Fell, close to the Roxburghshire border, and running 11 miles south-south-westward through or along the border of Ewes, Canonbie, and Langholm parishes, till, after a descent of 600 feet, it falls into the Esk at a point $2\frac{1}{2}$ miles SSE of the town of Langholm. It has a very rugged channel and romantic banks. So impetuous is its course, and so obstructed by rocks, that any person whom it might sweep away is in less danger of being drowned than of being dashed to pieces. Hence the old doggerel:

'Was ne'er ane drowned in Tarras, nor yet in doubt,
For ere the head can win down, the horns are out.'

Another old rhyme, which celebrates the localities in Liddesdale and Eskdale most noted for game, gives prominent importance to the Tarras:

'Bilhope-braes for bucks and raes,
And Carit-haugh for swine,
And Tarras for the good bull-trout,
If he be ta'en in time.'

'The bucks and roes, as well as the old swine,' says Sir Walter Scott, in a note to the *Lay of the Last Minstrel*, 'are now extinct; but the good bull-trout is still famous.' See HARDEN.—*Ord. Surv.*, sh. 11, 1863.

Tarrensay. See TARRANSAY.

Tarth Water, a sluggish but troutful rivulet of Peeblesshire, rising $2\frac{1}{2}$ miles SW of West Linton, and running $6\frac{1}{2}$ miles south-south-eastward, chiefly along the boundaries of Linton, Dolphinton, Kirkurd, Newlands, and Stobo parishes, till it falls into Lyne Water near Drochil Castle.—*Ord. Surv.*, sh. 24, 1864.

Tarves, a village and a parish of central Aberdeenshire. The village, standing 274 feet above sea-level, is $5\frac{1}{2}$ miles NE of Old Meldrum, $6\frac{1}{2}$ W by N of Ellon, and $5\frac{1}{2}$ NNW of Udney station. It has a post, money order, and telegraph office under Aberdeen, a branch of the Town and County Bank, and a hotel.

The parish, very irregular in outline, is bounded N by Methlick, NE by New Deer, E by Ellon, SE by Udney, SW by Bourtie and Meldrum, and NW by Fyvie. Its utmost length, from NNE to SSW, is 8 $\frac{1}{2}$ miles; its utmost breadth, from E to W, is $7\frac{1}{2}$ miles; and its area is 25 $\frac{1}{2}$ square miles or 16,333 $\frac{3}{4}$ acres, of which 30 $\frac{1}{2}$ are water. The only stream of any size is the YTHAN,

which here has a south-south-easterly course of nearly 2½ miles, viz., 1½ mile along the boundary with Methlick, then SE across the Schivas or north-eastern wing of the parish. The triangular Upper Lake (2½ × 1 furl.) in the Haddo grounds lies on the Methlick boundary, 2½ miles N by E of the village. In the extreme E the surface declines to 48 feet above sea-level; and thence it rises gently to 578 feet at the Hill of Skilmaffry on the New Deer boundary, 389 at the Earl of Aberdeen's monument on the Hill of Ythsie, 458 near Tolquhon, 363 near Courtstone, and 476 at Couchercairn near the western border. The rocks include granite, gneiss, and limestone; and the soil for the most part is a fertile loam, incumbent on clay drift. Except in the vicinity of Haddo House, the parish is rather bare of trees. Cattle-breeding is largely carried on; and an old established cattle, horse, and sheep fair is held on the Friday after 28 August at Bartol or Bartle (Bartholomew) Chapel, 4½ miles WNW of the village and 5 N of Old Meldrum. Schivas, now a farmhouse, 4½ miles NNE of the village, was built about 1640, and was the seat of a Roman Catholic branch of the Grays. The ruined castle of Tolquhon, 2½ miles S by E of the village, with the exception of an older tower, was built by William Forbes in 1584-89. Held first by the Prestons, and then, from 1420, by the Forbeses, the Tolquhon estate was purchased in 1716 by Lieut.-Col. Francis Farquhar, and from him it passed to the second Earl of Aberdeen. The remains of Tillyhilt Castle (1538) are 1½ mile WNW of the village. The Earl of Aberdeen is sole proprietor, and one of his titles is Baron Tarves. Giving off portions to the *quoad sacra* parishes of Savoch and Barthol Chapel (or Gordon Memorial), Tarves is in the presbytery of Ellon and the synod of Aberdeen; the living is worth £270. The parish church, at the village, was built in 1798. At Craigdam, 1½ mile WSW, is a U.P. church (1806), and three public-schools—Barthol Chapel, Craigdam female, and Tarves—with respective accommodation for 124, 80, and 238 children, had (1893) an average attendance of 87, 71, and 159, and grants of £73, 14s., £62, 2s. 6d., and £145, 10s. 6d. Pop. (1801) 1756, (1831) 2232, (1861) 2509, (1871) 2443, (1881) 2558, (1891) 2344, of whom, *quoad sacra*, 1700 belonged to Tarves, 148 to Savoch, and 496 to Barthol Chapel.—*Ord. Sur.*, shs. 87, 77, 86, 1874-76.

Tarvit Hill. See CUPAR.

Tayfield, a mansion in Forgan parish, Fife, close to Newport, and opposite Dundee.

Tayinloan. See KILLEAN and KILCHENZIE.

Tay, Loch, a magnificent lake in Breadalbane, Perthshire. Commencing at the foot of Glendochart and Glenloch, where it receives the united waters of these glens, and lying 355 feet above sea-level, it extends 14½ miles north-eastward from the vicinity of KILLIN to KENMORE, where it discharges itself by the river Tay. Its breadth ranges between 3½ furlongs and 1½ mile, and its depth between 15 and 100 fathoms. It is strictly a Highland lake, similar in character to the lakes of Glenmore-nan-albin, flanked by mountains and occupying a glen. The mountains on its N side form a bulky chain, rising into bare, lofty, finely-outlined heads, the most conspicuous of which is BEN LAWERS (3984 feet), the highest summit in Perthshire. The heights on the S side are soft, regular, and much less lofty; but, like those on the N side, are well clothed with heath and verdure. Good roads are carried along both sides of the lake from end to end. The N road is the best for carriages, and the one most commonly taken by travellers; but it has the disadvantage of being too distant from the lake's margin, too high up the mountain slope, to command as good views as those which are obtained from the other road. Though it generally overlooks almost the entire expanse of the lake, the prospect is unvaried and monotonous, the foregrounds tame or altogether wanting; and there is an almost total absence of those delicious close views which are the delight alike of the artist and the connoisseur. Had this road been carried nearer to the margin of the lake, and amid the windings of the beauti-

ful promontories and bays with which it is bounded, the effect of a ride up the N shore of Loch Tay would have been very different. The man of taste would have selected this line; nor would he have found fault with the additional 2 miles of road which are saved by the straightforward views of Marshal Wade. In taking the S road, however, the case is materially different. This road generally runs near the lake, and follows in numerous instances the sinuosities of its margin and the inequalities of the ground. The delicacies of the southern range of mountains are, besides, much more varied and intricate than those on the N; while the general outline of the northern range, being bolder and loftier than the southern, forms a striking termination to the views from this side. Few roads, therefore, are more productive of a succession of picturesque landscapes, or offer greater temptations to the traveller than this. The landscapes here present an ever-varied foreground; are rich and full in the middle distance; while the extreme distance is grand and imposing. Near the foot of the lake, 3 furlongs from Kenmore, is a small wooded islet, with the shapeless ruins of an Augustinian priory, founded in 1122 by Alexander I. for himself and the soul of his queen, Sibylla, a natural daughter of Henry I. of England, who on 12 June of that year had died suddenly at the castle of Loch Tay, and whom he here interred. Auchmore House, a seat of the Marquis of Breadalbane, is situated at the head of the loch, near the S shore; and on the opposite side, near the ivy-covered ruins of Finlarig Castle, one of the oldest seats of the barons of Breadalbane, is situated the very old and picturesque burying-ground of the family. On 10 Sept. 1842 a splendid flotilla of six gorgeous barges rowed up the lake to Auchmore, bearing Queen Victoria and Prince Albert, the Marquis of Breadalbane, Sir Robert Peel, etc. Since 1883 a steamer has plied to and fro on Loch Tay from Kenmore to Killin pier (the terminus of the Killin branch of the Callander and Oban railway), stopping at Fernan and Lawers on the north bank, and at Ardtalnaig and Ardenaig on the south. The loch is famed for its spring salmon fishing, which can be enjoyed by the residents at the various hotels along its shores. The fish range from 18 to 43 lbs.—*Ord. Sur.*, shs. 46, 47, 55, 1869-72.

Taymouth, a mansion in Kinclaven parish, Perthshire, on the right bank of the Tay, 2 miles NNE of Stanley.

Taymouth Castle, the seat of the Earl of Breadalbane, in KENMORE parish, Perthshire, near the right bank of the winding Tay, 1 mile NE of the foot of Loch Tay, and 5 miles WSW of Aberfeldy. Built between 1801 and 1842 on the site of the Castle of Balloch (1580), it is a magnificent pile of four storeys, with round towers at the angles, extensive wings on either side, and a massive central quadrangular tower, forming an airy pavilion 150 feet high. It is constructed of a dark grey stone; and the interior is fitted up in a most princely style, and adorned with paintings by Titian, Rubens, Vandyke, etc. The pleasure-grounds, comprising a circuit of 13 miles, contain a great number of noble trees, and are laid out in a style of elaborate decoration which has sometimes been pronounced too fine and formal. The Queen and Prince Albert made a visit of three days to Taymouth Castle in Sept. 1842; and on 3 Oct. 1866 the Queen drove over again from Dunkeld. Sir Colin Campbell of Glenorchy (c. 1400-78), younger son of Sir Duncan Campbell of Lochow, received from James III. the barony of Lawers. Among his descendants have been Sir Duncan Campbell, created a baronet in 1625; Sir John Campbell (1635-1716), created Earl of Breadalbane in 1681, whom Macky described as 'grave as a Spaniard, cunning as a fox, wise as a serpent, and slippery as an eel;' John, fourth Earl (1762-1834), created Marquess of Breadalbane in 1831; and Gavin, seventh and present Earl (b. 1851; suc. 1871), who is thirteenth in descent from Sir Colin.—*Ord. Sur.*, sh. 55, 1869. See BREADALBANE, KILCHURN CASTLE, GLENCOE, and chap. xxxii. of T. Hunter's *Woods, Forests, and Estates of Perthshire* (Perth, 1888).

Taynuilt, a hamlet in Muckairn parish, Argyllshire, near the southern shore of Loch Eive, with a station on the Callander and Oban railway, 15½ miles E by N of Oban. It has an inn and a post office, with money order, savings bank, and telegraph departments.

Tayport. See FERRY-PORT-ON-CRAIG.

Tay, The, a river draining the greater part of Perthshire and passing off to the sea between Forfarshire and Fifeshire. It issues from Loch Tay, or rather begins there to take the name of Tay; but it is really formed by two great head-streams which rise among the Gramscians on the mutual border of Perth and Argyll shires. The northern stream bears successively the names of the BA, the GAUR, and the TUMMEL; and, in its progress, it forms, by expansion of its waters, the three great lakes of LYDOCH or Laidon, RANNOCH, and TUMMEL. It rises at an altitude of 2309 feet, within ¼ mile of an affluent of the Eive, and 4½ miles SSW of Kingshouse Inn; and thence it winds 58½ miles east-north-eastward and south-south-eastward—viz., 29½ miles to its efflux from Loch Rannoch (668 feet), 15½ thence to its efflux from Loch Tummel (480 feet), 4½ thence to the Garry's confluence, and 9½ thence to its own confluence with the Tay. It traverses or bounds the parishes of Glenorchy (in Argyllshire) and Fortingall, Dull, Blair Athole, Moulin, and Logierait. The southern one of the great head-streams bears successively the names of the FILLAN, the DOCHART, and the Tay; and traverses, in its progress, Loch Dochart and Loch Tay. Rising at an altitude of 2980 feet on the northern side of BENLOX, at the boundary of Killin with Argyllshire, it flows 56½ miles east-north-eastward—viz., 25½ miles to the head of Loch Tay, 14½ miles through the lake, and 17 miles from its foot to a confluence with the Tummel at an altitude of 185 feet. It bounds or traverses the parishes of Killin, Kenmore, Fortingall, Dull, Weem, Logierait, and Little Dunkeld, and receives the Lochy, the Lyon, and other streams. From its junction with the Tummel to its junction with the Earn, where it begins to expand into an estuary, the Tay winds 36½ miles southward, eastward, southward, and east-south-eastward; and over this part of its course, it has on its right bank Little Dunkeld, Kinclaven, Auchtergaven, Redgorton, Tibbemor, Perth, and Rhyn, and on its left bank Logierait, Dunkeld and Dowally, Caputh, Carrigill, St Martins, Scone, Kinnoull, Kinfauns, and St Madoes. As an estuary, it extends 24½ miles from the mouth of the Earn to the German Ocean; has for the first 15 miles a breadth of from 3¼ furlongs to 3½ miles, and the direction of NE by E; has over the other 9½ miles a prolonged contraction of from 7 furlongs to 1½ mile, and a prevailing easterly direction; and separates Abernethy in Perthshire and the parishes of Newburgh, Abdie, Dunbog, Flisk, Balmerino, Forgan, and Ferry-Port in Fife on its right bank, from St Madoes, Errol, Inchture, and Longforan in Perthshire, and Liff and Benzie, Dundee, Monifieth, and Barry in Forfarshire on its left. Its entire length of course, jointly as a river and as an estuary, is thus, if measured from the source of the Ba, 119½—if measured from the source of the Fillan, 118 miles.

The tributaries of the Tay, even excluding the secondary ones, are so numerous, that only the principal must be named. Those of the northern great head-branch are only two—the Erich, which falls into Loch Rannoch, and the Garry, which brings along with it the Edendon, the Erichdie, the Bruar, and the Tilt, and falls into the Tummel a little below Killiecrankie. Those of the southern great head-branch are also but two—the Lochy, which joins the Dochart at the village of Killin, and the Lyon, which brings along with it Glenmore Water, and joins the Tay 2½ miles below the foot of Loch Tay. Those of the united stream are the Bran, on the right bank, opposite the town of Dunkeld; the Isla, swollen by the Dean, the Erich, and other streams, and entering on the left bank, near Carrigill station; the Shochie, on the right bank, at Lun-carty; the Almond, on the same bank, 2½ miles above

Perth; and the Earn, also on the same bank, at the commencement of the estuary, or 2¼ miles above the town of Newburgh. Those of the estuary are all inconsiderable, the largest being Dighty Water, which disembogues itself from Forfarshire, 1½ mile below Broughty Ferry.

From the vicinity of Broughty Ferry on the one shore, and Ferry-Port-on-Craig on the other, to the mouth of the estuary, there is a sweep of sandbank, called Barry or Goa Sands on the north side, and Abertay Sands on the south. The opening or breadth of channel beneath the two sides of the sandbank varies from 5½ furlongs to 1½ mile; and the depth of water is about 3 fathoms, but, higher up the firth, increases to 6. Sandbanks occur elsewhere, especially a large and shifting one opposite Dundee; but they have all been rendered harmless to navigation by means of dredging, buoys, lighthouses, and charts. The estuary in general is shallow, and receives much *debris* from the steady and large current of the river. Though it cannot compare in spaciousness and some other properties with the Forth, it is not a little commodious, and may be considered as, over large part of its extent, a continuous harbour. The tide flows to a point about 2 miles above Perth; and, in consequence of improvements made in the channel, vessels of 200 tons can pass up to PERTH harbour. The Tay Bridge is described under DUNDEE; and the unrivalled salmon fisheries of the river and estuary are treated of in our supplementary article on the Fisheries of Scotland.

The extent of surface drained by the Tay and its tributaries is computed at 2400 square miles, and that of the Spey, the entirely Scottish river next to it in size, at 1190 square miles. The geographic positions and character of the district whence most of the waters are drawn being in the case of the two rivers very similar, the Tay may be supposed to discharge about twice as much water as the Spey. Dr Anderson, making a nice measurement for a judicial purpose, determined the quantity of water which, in the mean state of the river, flows through a section of it opposite Perth, to be at the rate of 3640 cubic feet per second. The river, as represented on a map, or imagined after a survey of the vast district which composes its basin, appears emphatically 'the many-headed Tay'; and, in consequence of its great feeders coming down like the main arteries on a half-moon-shaped leaf, it has less inequality in its stream than occurs in either the Spey or any other of our Highland rivers. The variety of its origin, too, affords such a compensation of rain as always, except in seasons of extreme drought, to yield a sufficient bulk and altitude of water for the occupying of its path, and the beautifying of its landscape; while the wide variety in the relative distance of its sources, prevents its floods, however high, from being as sudden as those of the Spey, the Aberdeenshire Dee, and some other upland streams. Yet, owing to the gradual but great extension of the system of draining which is prosecuted on arable grounds and on reclaimable mosses and moorlands, the river has become considerably less equable than at a former period: it swells during great floods to a magnitude which never in former days belonged to it; it subsides during a continued drought to a corresponding diminution of volume; and in its ordinary or mean state it has very visibly lost some of its ancient greatness and importance. Though averagely charged at Perth, as we have seen, with 3640 cubic feet of water per second, it was reduced in the course of the summer of 1819 to 457 cubic feet, and at the close of the summer of 1835 to a still smaller volume.

Much of the country which now forms the seaboard of the estuary, and especially the whole of the Carse of Gowrie and the lower part of Strath-tay, exhibit evidence of having at a comparatively recent period lain under the sea, and been gradually raised above its level by depositions from the Tay. After the Carse of Gowrie became dry land, too, the Tay seems for a long series of years to have made a circle round its N side, along the foot of the Sidlaw Hills, entering what was then the

Firth of Earn at Invergowrie, and entirely peninsulating the Carse, or cutting it into a series of islands. Great modern changes have taken place likewise on all the vale or strath of the Tay S of the confluence of the Tummel. Dr Macculloch, from close and various observations on cuts of corresponding rocks on the opposite sides of the stream, and on the harmonising altitude of series of alluvial terraces in the screens of the valley, calculates that the ancient level of the river, from Logierait downward, was about 100 feet above the present bed; and he adds: 'And thus, while it is easy to see how far the Tay has sunk, it would not be very difficult to compute the quantity of land or earth that has been removed and carried forwards towards the sea. When we look at this enormous waste we need not be surprised at the formation of the Carse of Gowrie, nor at the deposits which are still augmenting it; shoaling the sea about Dundee, and laying the foundations of new meadows. For this operation is still going on, and must go on as long as the Tay shall continue to flow; though diminishing in rapidity as the declivity and consequent velocity of the river itself diminish. If it is curious to speculate on the period when Perth, had it then existed, must have been a seaport, and when the narrow Tay, far above and below it, was a wide arm of the ocean, it is not less so to consider what the aspect of Strathray itself was when the present place of Dunkeld was buried deep beneath the earth. Nor is it difficult even to see what it must have been. By laying our eye on any of the terraces, it is easy to bring the opposed one in the same plane, and thus to exclude all the valley beneath, reducing it once more to what it was when the river was flowing above. These speculations, thus pursued, may interest the artist as well as the geologist and the geographer; since, not only here but in every deep valley of the Highlands, he would, in making such trials, be at a loss to recognise in the original shallow and rude glen the spacious and rich valley which is now the seat of beauty and cultivation. Contemplating in this manner not only the Highland mountains and valleys, but those of the world at large, we are lost in the magnitude of the changes which have carried the rains of the Himalayas to the mouths of the Ganges—which from the sediments of the Nile have formed the land of Egypt—and which have created out of the lofty ridges of America the plains that now form so large a portion of its continent.'

The Tay, inclusive of its principal tributaries, is by much the most scenic of the British rivers. Its estuary and the lowest 3 or 4 miles of its stream, are a continued expanse of loveliness, softly screened with heights or swells of the gentlest beauty. Its vale, from the romantic Hill of Kinnoull, a little below Perth, to the Pass of Birnam, 2 miles below Dunkeld, is everywhere lively, frequently brilliant, and occasionally gorgeous. Its scenery hence to the mouth of the Tummel, as seen from a vantage ground in the vicinity of Dunkeld, is pronounced by Dr Macculloch singularly rich and grand, with all its features, for about 6 miles, so minutely detailed before the eye that every part of its various ornament is most advantageously seen. 'On each hand,' says he, 'rises a long screen of varied hills, covered with woods in every picturesque form; the whole vista terminating in the remoter mountains, which, equally rich and various, are softened by the blue haze of the distance, as they close in above the Pass of Killiecrankie. This general view, varied in many ways by changes of level and of position, forms the basis of the landscape for some miles; but so great are the changes in the middle-grounds, and so various the foregrounds, that although the same leading character is observed the separate scenes are always strongly distinguished. Many distinct pictures can thus be obtained, and each of them perfectly adapted for painting; so that Strathray is here an object to charm every spectator—him who desires to see everything preserved in his portfolio, and him who seeks for nothing in Nature but beauty, come under what form it may. Though the western and upper branch of Strathray

(from the junction of the Tummel upward to Kenmore) is not, perhaps, equal in splendour to the lower and southern one, it still maintains the same character of richness throughout; while, instead of the flat extended meadows which mark the latter, it displays a considerable undulation of ground. Thus the vale of the Tay, from Dunkeld even to Kenmore, a space of 25 miles, is a continued scene of beauty; a majestic river winding through a highly wooded and cultivated country, with a lofty and somewhat parallel mountain boundary, which is itself cultivated as far as cultivation is admissible, and is everywhere covered with continuous woods or trees as high as wood can well grow. It contains, of course, much picturesque scenery; presenting not only landscapes of a partial nature, comprising reaches of the river, or transient views in the valley produced by the sinuosities of the road, but displaying the whole to its farthest visible extremity, under aspects which are varied by the casual variations of level or position, or by the accidental compositions of the fore or middle grounds. Where Ben Lawers is seen towering above all in the remotest distance, these views are peculiarly magnificent; nor is anything ever wanting which the artist could require to give fullness and interest to the nearer parts of the landscape, where, after all, the chief interest must always lie. 'I believe that Strathray is, in point of splendour and richness, the first of the Scottish valleys.'—*Ord. Surv.*, shs. 53, 54, 55, 46, 47, 48, 49, 1865-77. See *The Tay*, by J. Geddie (1891).

Tealing, a Forfarshire parish, whose church stands 6½ miles N of Dundee, under which there is a post office. It is bounded N and NE by Inverarity, E and SE by Murroes, S by Mains and Strathmartine, W by Auchterhouse, and NW by Glamis. Its utmost length, from N to S, is 4½ miles; its utmost breadth, from E to W, is 4 miles; and its area is 7036½ acres, of which 4 are water. A small detached portion situated at Pitpointie, 3 furlongs W of the main body, and comprising 195 acres, was transferred by the Boundary Commissioners in 1891 to the parish of Auchterhouse. FIFTH Burn traces much of the southern boundary; and several rivulets, rising on the north-western border, run mainly south-eastward through the interior. Sinking in the SE to 350 feet above sea-level, the surface thence rises north-westward and northward towards the watershed of the Sidlaw Hills, attaining 510 feet near the parish church, 900 at Balluderon or Craigowl Hill, and 1104 at a nameless height 2½ miles N of the church. Trap occurs, but the principal rocks are Devonian, mostly grey slaty sandstone. 'In the lower lying portion of the parish there is a good deal of strong rich land, that yields well when skillfully managed and when the seasons suit. It is a clayey loam with a subsoil of clay and gravel, in some parts rather retentive. In part of the hollows there is also very poor soil, thin, hard, and unproductive, with very stiff subsoil. There are several instances in this parish where the land on the one side of the road is worth 25s. or 30s. an acre, and not worth more than 15s. or 20s. on the other. On the higher lying parts there is also a good deal of variety of soil, but in general it is a moderately fertile loam, resting on a clayey or gravelly subsoil which in some parts is not so open as could be wished' (*Trans. Highl. and Ag. Soc.*, 1881). About 500 acres are pastoral or waste, as much or rather more under wood, and the rest of the land is in tillage. A subterranean building, a subterranean cave or passage, several stone coffins, and some small Roman antiquities have been found at various periods. The Rev. John Glass (1695-1773), the founder of the Glassites or Scottish Sandemanians, was minister of Tealing from 1719 till his deposition in 1728. Tealing is in the presbytery of Dundee and the synod of Angus and Mearns; the living is worth £218. The parish church was built in 1806, and contains 700 sittings. There is also a Free church; and a public school, with accommodation for 138 children, had (1893) an average attendance of 86, and a grant of £85. Valuation (1855) £7605, 16s., (1893) £5681, 6s. Pop. (1881) 757, (1891) 630.—*Ord. Surv.*, shs. 48, 49, 57, 1865-68.

Teaninich House, a mansion in Alness parish, Ross and Cromarty, between Alness village and the Cromarty Firth.

Technuiry. See STRICHEN.

Teith, The, a river of SW Perthshire, formed by two head-streams which rise within $\frac{3}{4}$ mile of one another, and within 2½ miles ENE of the head of Loch Lomond, but which so far diverge from each other as to be at one point 9½ miles asunder. The northern one, rising at an altitude of 1760 feet, runs 8½ miles E by N to Loch DOINE ($7\frac{1}{2} \times 2\frac{1}{2}$ furl.; 420 feet), passes 1½ furlong thence to Loch VOIL ($3\frac{1}{2}$ miles $\times$ 3 furl.; 414 feet), assumes then the name of the Balvag, and winds 6 miles south-eastward to Loch LUBNAIG ($3\frac{1}{2}$ miles $\times$ 3 furl.; 405 feet), and thence, through the pass of LENY, goes 3½ miles south-eastward to a confluence with the other head-stream in the vicinity of Callander. It thus has a total course of 25½ miles, mainly through the parish of Balquhider, but partly through that of Callander. The southern head-stream, rising at an altitude of 1750 feet, runs 3½ miles south-eastward through GLENGYLE to Loch KATRINE (8 miles $\times$ 7½ furl.; 364 feet), from its foot passes 1½ mile east-by-southward through the TROSSACHS to Loch ACHRAY ($1\frac{1}{4}$ mile $\times$ 3 furl.; 276 feet), winds next 1½ mile east-south-eastward to Loch VENNACHAR ($3\frac{1}{2}$ miles $\times$ 5 furl.; 270 feet), and proceeds thence 1½ mile east-north-eastward to its confluence with the other head-stream. It is thus, in a large degree, the connecting stream of a chain of most picturesque lakes; and its length of run, inclusive of its course through those lakes, is 20½ miles, through or along the borders of Callander, Buchanan, Aberfoyle, and Port of Monteith parishes. The Teith proper, or united stream, abounds in beautiful scenery, but has none of the grand, bold, romantic features of its headwaters. It runs 13½ miles south-eastward through or along the borders of Callander, Kilmadock, Kincardine, and Lecropt parishes. Its tributaries are numerous; but, excepting Keltie Water, they are all inconsiderable. The 'arrowy' Teith, if either its volume of water or its length of course had been made the ground of decision, would have been regarded as the parent-stream, and the FORTH which joins it as the tributary. The point at which they unite is the Bridge of Drip, 2¼ miles NW of Stirling. Yielding fairly good salmon and trout fishing, the Teith is a clear stream, and for the most part rapid. It is excelled by none in Scotland for water-power, or for general adaptation to manufacture; yet in consequence of the want of lime and coal there is but a small aggregate of public works on its banks.—*Ord. Sur.*, shs. 46, 38, 39, 1869-72.

Templand, a village in Lochmaben parish, Dumfriesshire, 2½ miles N of the town. It has a post office under Lockerbie.

Temple. See LARGO.

Temple, a village and a parish in the S of Edinburghshire. The village stands, 605 feet above sea-level, on the right bank of the South Esk, 3 miles SW of Gorebridge station, 7 S by W of Dalkeith, and 12¼ SSE of Edinburgh. It is a quiet, sequestered, little place, with a post office under Gorebridge.

The parish is bounded NE by Borthwick, SE by Heriot, S and SW by Innerleithen and Eddleston in Peeblesshire, and NW by Penicuik and Carrington. Its utmost length, from N by E to S by W, is 8½ miles; its utmost breadth is 5½ miles; and the area is 22½ square miles or 14,250½ acres. A detached part of the parish, containing the greater part of Gorebridge village, and comprising 228 acres, was transferred by the Boundary Commissioners in 1891 to the parish of Borthwick. The river South Esk, rising at an altitude of 1700 feet on the western slope of Blackhope Scar, winds 9½ miles north-by-eastward through all the length of the parish, and quits it at the influx of Fullarton or Redside Burn, which traces all the north-western border. In the extreme N the surface declines to 590 feet above the sea; and chief elevations to the E of the South Esk, as one goes up the vale, are Cockmoor (990 feet), *Torichen Hill (1508), *Mauldsie Hill (1684), Huntly Cot Hill

(1694), the Kippis (1776), and *BLACKHOPE Scar (2136), the loftiest of the MOORFOOT HILLS; to the W, Toxside Moss (900), *Jeffries Corse (2004), and *Bowbeat Hill (2049), where asterisks mark those summits that culminate on the confines of the parish. The rocks of the hills are Lower Silurian, and those of the lower grounds include abundance of limestone and sandstone. The soil of the arable lands, though various, is generally fertile; but fully one-half of the entire area is hilly and mountainous sheepwalk, black and moorish in aspect. Through Gladhouse reservoir, on the course of the South Esk, this parish furnishes part of the water-supply of EDINBURGH; and two additional reservoirs (Rosebery and Edgelaw) have been constructed for compensation purposes. ROSEBERY and Toxside are the chief residences; and the principal proprietors are R. Dundas, Esq. of Arniston and the Earl of Rosebery. The parish comprises the ancient parish of Clerkington, and the chapelries of Moorfoot and Balantradoch. Clerkington, previous to the Reformation, was a vicarage under the monks of Newbattle. Moorfoot comprehended the upper half of the vale of the South Esk, and was a chapelry established by the Newbattle monks, to whom the lands had been gifted. The chapelry of Balantradoch, after the suppression of the Knights Templars, was granted in 1312 by Pope Clement V. to the Hospitallers or Knights of St John. The three districts having been united after the Reformation, assumed their present name from the circumstance of the chapel of the Templars having been adopted as their common or parochial church. Temple is in the presbytery of Dalkeith and the synod of Lothian and Tweeddale; the living is worth £182. The old parish church, still standing, is an oblong structure ($54\frac{1}{2} \times 17\frac{1}{2}$ feet), a simple but pleasing specimen of the transition from the First Pointed to the Scottish Decorated style. It has two long, narrow lancet windows (now blocked up), a large three-light E window, and smaller three-light windows on the S side; and it retains a piscina and Easter sepulchre. On the E gable below the bellry is an inscription which has puzzled antiquaries. The church formed part of a preceptory of the Knights Templars, which, founded by David I., and originally called Balantradoch, was the chief seat of the order in Scotland. The present parish church is a neat edifice of 1832, containing 400 sittings. There is also a Free church; and Temple public and Toxside schools, with respective accommodation for 124 and 47 children, had (1893) an average attendance of 59 and 22, and grants of £60, 3s. and £34, 18s. 6d. Valuation (1885) £10,060, (1894) £5584, plus £12,458 for railway and waterworks. Pop. (1801) 855, (1831) 1255, (1861) 1385, (1871) 1536, (1881) 1551, (1891) 455.—*Ord. Sur.*, shs. 32, 24, 1857-64.

Templelands. See STRATHMIGLO.

Temple Liston. See KIRKLISTON.

Tenandry, a *quoad sacra* parish in Athole district, Perthshire. Constituted in 1836 by the presbytery, and reconstituted in 1851 by the Court of Teinds, it is in the presbytery of Dunkeld and the synod of Perth and Stirling. Stipend, £175. The church, near the right bank of the Garry, 1 mile S of Killiecrankie station, was built in 1836, and contains 430 sittings. Pop. (1871) 530, (1881) 497, (1891) 389, of whom 72 belonged to Blair Athole, 130 to Dull, and 187 to Moulin.—*Ord. Sur.*, sh. 55, 1869.

Tents Moor. See LEUCHARS.

Terraughtie, a mansion in Troqueur parish, Kirkcudbrightshire, 2½ miles W by S of Dumfries. It belongs to the owner of MUNCHES.

Terregles, a parish of NE Kirkcudbrightshire, containing a very small portion of the parliamentary burgh of Dumfries. It is bounded NE and E by Holywood and Dumfries in Dumfriesshire, SE and S by Troqueur, SW by Lochruton, and NW and N by Kirkpatrick-Ingroy. Its utmost length, from ENE to WSW, is 4½ miles; its utmost breadth is 2½ miles; and its area is 3868½ acres, of which 26 are water. CLUDEN Water winds 2½ miles east-south-eastward along or close to all the north-eastern border till it falls into the river NITH,

which itself curves $9\frac{1}{2}$ furlongs south-by-eastward along all the Dumfries boundary; whilst CARGEN Water flows $3\frac{1}{2}$ miles east-north-eastward and south-eastward, mainly along the Lochrutton and Troqueer boundary, but for a brief distance through the southern interior. All that part of the parish to the E of the church is low and flattish, rarely sinking much below 50 or much exceeding 100 feet above sea-level; but the western border is hilly, and, rising near Brae Croft to 692 feet, commands thence a beautiful view of the vale of the Nith, the town of Dumfries, the Solway Firth, and the distant Cumberland mountains. The rocks are variously eruptive, Silurian, and Devonian; and the soil, though diversified, is generally fertile. On Terreglestown farm, 2 miles W by N of Dumfries, stood a good-sized village, erected into a burgh of barony in 1510; and near it is a spot, the Gallows Hill, where criminals in bygone days were hanged. The chief antiquity, LINCOLN COLLEGE, is noticed separately; and a history of it by Mr Wm. McDowall was published in 1884. Sir John Herries had a charter of the lands of 'Traveregis' or Terregles from David II., on the resignation of the same by Thomas, Earl of Mar, in 1359; and his descendant, Sir Herbert Herries, was created Lord Herries of Terregles in or prior to 1489. In 1547 his great-granddaughter, Agnes, Lady Herries, married John Maxwell, second son of the fifth Lord Maxwell, who, in 1566, assumed the title of fourth Lord Herries, in virtue of his wife, and who is famous in history as Queen Mary's zealous adherent. According to his memoirs (Abbotsford Club, 1836), on the rout of Langside, 13 May 1568, Queen Mary 'was carried from the field by the Lords Herries, Fleming, and Livistounne. Prettie George Douglas and William the Fundlin escapt also with the Queen. She rode all night, and did not halt until she came to Sanquhir. From thence she went to Terregles, the Lord Herries' hous, where she rested some few dayes, and then, against her friends' advyce, she resolved to go to England and commit herself to the protection of Queen Elizabeth; in hopes, by her assistance, to be repossessed again in her kingdome. So she embarked at a creek near DUNDRENNAN, in Galloway, and carried the Lord Herries to attend her with his counsel, and landed at Workington, in Cumberland. Here she stayed, and sent the Lord Herries to Londone, in hopes to be recaved with honor.' Three relics of this brief visit are still preserved at Terregles—the Queen's illuminated Missal (1544), remains of her bed, and the silken embroidered leading-strings of James VI. John, seventh Lord Herries, in 1667 succeeded his cousin as eleventh Lord Maxwell and third Earl of Nithsdale; but in 1716 all three titles were attained in the person of the Jacobite fifth Earl, whose escape from the tower in woman's attire was effected by the heroism of his countess, Lady Winifred Herbert. She had buried the family muni-ments in the garden at Terregles ere starting on the long ride to London, in the depth of winter—a lady naturally delicate, and then advanced in pregnancy; and, after the Earl's escape, she returned, and dug up the deeds, by one of which, executed in 1712, the estates were disposed to William, the only son. His daughter and heiress, Winifred, married William Haggerston Constable, Esq. of Everingham, in Yorkshire, and built about 1789 the present spacious mansion of Terregles—an event commemorated by Robert Burns in *Nithside's Welcome Hame*. In 1814 her son Marmaduke disposed the lands and baronies of Terregles, Kirkgunzeon, etc., which formed great part of the ancient Herries estates, to his second son, Marmaduke; and he, in 1872, was succeeded by his nephew, Alfred Constable Maxwell, Esq. The present proprietor is Herbert Constable Maxwell Stuart (b. 1842; suc. 1890). The family has always adhered to the Catholic faith; and on 14 Nov. 1879, the interesting 'queir' or choir of Terregles, which was founded by the fourth Lord Herries not long before his death in 1583, and which contains the tombs of himself and his descendants, was reopened by the Bishop of Galloway after a thorough four years' restoration at the cost of the then proprietor. Terregles is

in the presbytery and synod of Dumfries; the living is worth £158. The parish church is a poor building of 1799, and contains nearly 300 sittings. The public school, with accommodation for 60 children, had (1893) an average attendance of 40, and a grant of £37, 1s. 6d. Pop. (1801) 510, (1831) 606, (1861) 580, (1871) 547, (1881) 471, (1891) 478, of whom 14 were in the parliamentary burgh of Dumfries.—*Ord. Sur.*, sh. 9, 1863. See Sir William Fraser's *Book of Caerlaverock* (2 vols., Edinb., 1873).

Tertowie House, a modern mansion in Kinellar parish, Aberdeenshire, 6 miles SSE of Kintore.

Teviot, a river of Roxburghshire, formed at Geddingscleuch, 700 feet above sea-level and $12\frac{1}{2}$ miles SW of Hawick, by head-streams that rise at an altitude of from 1200 to 1300 feet close to the Dumfriesshire border. Thence it runs $37\frac{1}{2}$ miles north-eastward till it falls into the Tweed at Kelso. Its chief tributaries are, on the left bank, Hislop Burn, Borthwick Water, and Ale Water; and on the right bank, Frostley Burn and Allan, Slitrig, Rule, Jed, and Kale Waters. The parishes which it bounds or traverses are Teviothead, Hawick, Wilton, Cavers, Minto, Bedrule, Ancrum, Jedburgh, Crailing, Eckford, Roxburgh, and Kelso. The towns or villages on or near its banks are Hawick, Denholm, Ancrum, Crailing, Eckford, Heiton, Roxburgh, and Kelso. Its scenery is everywhere pleasant, often brilliant, and sometimes even superb. Its immediate banks are, for the most part, a charming inter-nation of rich haugh and variegated, often abrupt, rising ground. Its basin is for some distance a comparatively narrow vale, flanked with bold green heights; for a greater distance it is a strip of alluvial plain, screened by terraced but undulating and tumulated dale, and overhung at from 3 to 8 miles' distance by terminating heights; and in the lower course it is a richly variegated champaign country, possessing all the luxuriance without any of the tameness of a fertile plain, and stretching away in exulting loveliness to the picturesque Eildons on the one hand and the dome-like Cheviots on the other. Its upper parts abound in fastnesses, both natural and artificial, which figured constantly and fiercely in the old Border raids. The trout fishing is capital, especially over the lower 5 or 6 miles; and the salmon fishing is very fair.—*Ord. Sur.*, shs. 16, 17, 25, 1864-65.

Teviotbank, a handsome modern Elizabethan mansion in Minto parish, Roxburghshire, near the left bank of the Teviot, 5 miles NE of Hawick. Purchased by Edward Heron Maxwell, Esq. (1821-90), in 1860, it is now the property of his widow, Mrs Heron Maxwell Blair.—*Ord. Sur.*, sh. 17, 1864.

Teviotdale. See **TEVIOT** and **ROXBURGHSHIRE**.

Teviothead, a parish of SW Roxburghshire, whose church stands near the right bank of the Teviot, 14 miles N by E of Langholm and 9 SW of Hawick, under which there is a post office. Formed in 1850 out of Hawick and Cavers parishes, it is bounded NE by Hawick, E by Kirkton and Cavers, SE by Castleton, S and SW by Ewes, Wester Kirk, and Eskdalemuir in Dumfriesshire, and NW and N by Robertson. Its utmost length, from NE to SW, is $10\frac{1}{2}$ miles; its breadth varies between $3\frac{1}{2}$ and $7\frac{1}{2}$ miles; and its area is nearly 49 $\frac{1}{2}$ square miles or 31,599 $\frac{1}{2}$ acres, of which 101 are water. The **TEVIOT**, formed at Geddingscleuch, 700 feet above sea-level, by head-streams that rise at an altitude of from 1200 to 1300 feet close to the Dumfriesshire border, winds $9\frac{1}{2}$ miles north-east-by-eastward, for the last $3\frac{1}{2}$ furlongs along the Hawick boundary, till it passes off into Hawick at Raesknowe. **ALLAN** Water, formed by Priesthaugh and Skelfhill Burns, runs 5 miles north-north-eastward and north-north-westward, for the last $2\frac{1}{2}$ miles along the Kirkton and Hawick boundary, till it falls into the Teviot at the northern extremity of the parish; and, with its affluent, the Dod Burn, supplies the town of **HAWICK** with water. The surface, sinking to 490 feet above sea-level at the Allan's influx to the Teviot, is everywhere hilly, chief elevations to the NW of the Teviot, as one goes up the vale, being

Swansteads Hill (1093 feet), *Calfshaw Head (1320), Blackcleuch (1050), and *Stock Hill (1561); to the SE, Broadhaugh Hill (913), Skelfhill Pen (1745), *CAULDCLEUCH Head (1996), *Tudhope Hill (1961), and *Wisp Hill (1950), where asterisks mark those summits that culminate on the confines of the parish. The rocks are chiefly Silurian; and the soil of the arable lands is mostly gravelly. The road from Hawick to Langholm runs 8 miles through the parish—for $4\frac{3}{4}$ miles up the vale of the Teviot as far as the church, and then for $3\frac{3}{4}$ miles up the narrower glen of Frostley Burn to disused Mossaul inn at the Ewes boundary. Up this road, on 23 Sept. 1803, drove Wordsworth and his sister Dorothy, who writes in her Journal that 'the quantity of arable land gradually diminishes, and the plantations become fewer, till at last the river flows open to the sun, mostly through unfenced and untilled grounds, a soft pastoral district, both the hills and the valley being scattered over with sheep. Here and there was a single farm-house, or cluster of houses, and near them a portion of land covered with ripe corn. Towards the head of the vale of Teviot, where that stream is but a small rivulet, we entered another valley. Hereabouts Mr Walter Scott had directed us to look about for some old stumps of trees, said to be the place where Johnnie Armstrong was hanged; but we could not find them out. [See CAERLANRIG.] The valley which we were ascending, though, for ought I know, it is unnamed in song, was to us more interesting than the Teviot itself. Not a spot of tilled ground was there to break in upon its pastoral simplicity; the same soft yellow green spread from the bed of the streamlet to the hill-tops on each side, and sheep were feeding everywhere. It was more close and simple than the upper end of the vale of Teviot, the valley being much narrower, and the hills equally high and not broken into parts, but on each side a long range. The grass, as we had first seen near Crawfordjohn, had been mown in the different places of the open ground, where it might chance to be best; but there was no part of the surface that looked perfectly barren, as in those tracts. We saw a single stone house a long way before us, which we conjectured to be, as it proved, Mossaul, the inn where we were to bait.' Teviothead Cottage was long the home of the poet, the Rev. Henry Scott Riddell (1798-1870); and a spot overlooking it is crowned with a large cairn to his memory. The principal proprietors are the Duke of Buccleuch and Sir W. F. A. Elliott, Bart., of Stobs. Teviothead is in the presbytery of Jedburgh and the synod of Merse and Teviotdale; the living is worth £341. The church was built by the late Duke of Buccleuch in 1856, and contains 320 sittings. Teviothead public and Allan-water schools, with respective accommodation for 90 and 38 children, had (1893) an average attendance of 44 and 17, and grants of £65, 1s. 6d. and £32, 2s. 6d. Pop. (1861) 438, (1871) 515, (1881) 486, (1891) 453.—*Ord. Sur.*, shs. 17, 16, 1864.

Texa, an islet, 152 acres in area, off the SE coast of Islay island, Argyllshire, 2 miles ESE of Port-Ellen.

Thainston, a seat of the Forbes-Mitchells, in Kintore parish, Aberdeenshire, $2\frac{1}{2}$ miles NNW of Kintore town. It is a handsome edifice, in a charming situation, with a very extensive view; and succeeded a previous mansion which was plundered and burnt by the rebels in 1745.—*Ord. Sur.*, sh. 76, 1874.

Thankerton. See COVINGTON.

Thief's Road. See PEEBLESHIRE.

Thirdpart, an estate in Kilenreny parish, E Fife, $1\frac{1}{2}$ miles WSW of Crail. Its owner is Philip George Anstruther, Esq. (b. 1875; suc. 1884).—*Ord. Sur.*, sh. 41, 1857.

Thirlestane Castle, a modern mansion, the seat of Lord Napier and Ettrick, in Ettrick parish, Selkirkshire, beautifully situated, amid extensive plantations, near the left bank of Ettrick Water, 17 miles SW of Selkirk. Immediately behind it is a ruined tower, the stronghold of that Sir John Scott of Thirlestane whom James V. in 1542 pronounced 'Ready, eye ready' for battle. His descendant, Sir William Scott, Bart., in 1699 married

Elizabeth, Mistress of Napier, the great-great-granddaughter of the famous inventor of logarithms, John Napier of Merchiston (1550-1617), whose son, Sir Archibald, was created Baron Napier of Merchiston in 1627. The fifth descendant of this marriage, Francis Napier, present and ninth Lord Napier (b. 1819; suc. 1834), filled various high diplomatic stations from 1840 to 1865, and was governor of Madras from 1866 to 1872, when he was created Baron Ettrick in the peerage of the United Kingdom.—*Ord. Sur.*, sh. 16, 1864.

Thirlestane Castle, the seat of the Earl of Lauderdale, in Lauder parish, Berwickshire, on the right bank of Leader Water, 3 furlongs NE of Lauder town. Originally a strong tower called Lauder Fort, built by Edward I. during his invasion of Scotland, it was renovated or rebuilt by Chancellor Maitland, and acquired from the Duke of Lauderdale a new front and wings, together with great interior improvements. It now is a massive and stately pile, partly ancient and partly modern, whose decorations are mainly in the style of Charles II.'s reign. It has a profusion of elaborately carved chimney-pieces, and among its paintings, chiefly portraits, are some rare and valuable productions. Sir Richard de Maitland was Lord of Thirlestane in the latter half of the 13th century, and among his descendants were the blind poet, Sir Richard Maitland of Lethington (1496-1586); William Maitland, Secretary Lethington (1525-73), the 'Chameleon'; Sir John or Chancellor Maitland (1537-95), created Lord Maitland of Thirlestane in 1590; John, second Lord Maitland (d. 1645), created Earl of Lauderdale in 1624; John, second Earl (1616-82), created Duke of Lauderdale in 1672, of Cabal fame; and Charles, twelfth Earl (1822-84), who was killed by lightning whilst grouse-shooting near Lauder. The latter was succeeded by his cousin Sir Frederick Henry Maitland, present and thirteenth Earl (b. 1840; suc. 1884).—*Ord. Sur.*, sh. 25, 1865.

Thomaston, a ruined castle in Kirkoswald parish, Ayrshire, $4\frac{1}{2}$ miles W by S of Maybole. It is said to have been founded by a nephew of Robert Bruce in 1335.

Thom, Loch. See INNERKIP.

Thorn. See JOHNSTONE, Renfrewshire.

Thornhill, a village in Kincardine parish, Perthshire, 4 miles WSW of Doune and $9\frac{1}{2}$ WNW of Stirling. It has a post office, with money order, savings bank and telegraph departments, two inns, NORRISTON Established and Free churches, a public school, and a fair on the first Tuesday of January. Pop. (1861) 621, (1871) 498, (1881) 474, (1891) 428.—*Ord. Sur.*, sh. 39, 1869.

Thornhill, a village in Morton parish, Nithsdale, Dumfriesshire. It stands, 225 feet above sea-level, within $\frac{1}{2}$ mile of the Nith's left bank, and by road is 65 miles SSW of Edinburgh, 66 SSE of Glasgow, and 1 mile SW of Thornhill station on the Glasgow and South-Western railway (1850), this being $14\frac{1}{2}$ miles NNW of Dumfries and $28\frac{1}{2}$ SE of Cumnock. Crowning a terrace or rising ground, it commands a magnificent view, and chiefly consists of a spacious main street, $\frac{1}{2}$ mile long, which is planted with lime trees, and sends off three shorter streets at right angles to the main one. In the centre is a neat stone pillar or cross (1714), surmounted by the Queensberry arms. On 19 Aug. 1803 Coleridge, Wordsworth, and his sister Dorothy 'passed through the village of Thornhill, built by the Duke of Queensberry, the "brother-houses" so small that they might have been built to stamp a character of insolent pride on his own huge mansion of DRUMLANRIG, which is full in view on the opposite side of the Nith.' But the late Duke of Buccleuch effected striking improvements in 1833 and after years; and Thornhill now has a post office, with money order, savings bank, and telegraph departments, branches of the British Linen Co. and Union Banks, a local savings bank (1843), two good hotels, gasworks (1841), water and drainage works (1867), a brewery, a bowling green (1832), lawn tennis court, angling association, golf and cricket clubs, drill hall, a public library of about 1000 volumes, a musical club, a masonic lodge (1814) with a handsome hall

(1834), Oddfellows' lodge (1841), Foresters' court (1878), the Nithsdale Agricultural Society (1827), a horseshoe society, small debt courts on the second Thursday of April, August, and Dec., fairs on the second Tuesday of Feb., May, August, and Nov. *o.s.*, and the last Friday of June, weekly auction sales of live stock on Saturday, besides special sales of sheep in autumn and an extensive agricultural show on the third Tuesday of Sept. The presbytery of Penpont meets in Thornhill, and the Thornhill district committee of the County Council of Dumfries hold their meetings there. Dr Grierson's Museum (1869-72) of natural history and antiquities is specially interesting for its local antiquities and relics of Burns. In the grounds of the museum stands a statue of Richard Cameron the Covenanter. The parish church, $\frac{1}{2}$ mile NE, is a handsome Norman edifice of 1841, built at a cost of £3554, and containing 1200 sittings. A parish hall, commemorative of the jubilee of the church, was opened in 1894; it cost £1870, and is seated for 650 persons. There are also a U.P. church (1816) and an Evangelical Union chapel (1874). Joseph Thomson, the African explorer, was born at Penpont near Thornhill in 1853. The ruins of Tibbers Castle, referred to by Blind Harry and near Drumlanrig Castle, were carefully excavated a few years ago; while some 3 miles from the village are the ruins of Morton Castle, a favourite study for artists. Pop. (1881) 1289, (1891) 1128.—*Ord. Sur.*, sh. 9, 1863. See Dr C. T. Ramage's *Drumlanrig and the Douglasses* (Dumf. 1876).

Thornielee. See INNERLEITHEN.

Thorniebank, a manufacturing village in Eastwood parish, Renfrewshire, lying in a beautiful hollow, on the Auldhouse Burn, $\frac{1}{2}$ mile SSW of Pollokshaws. It has a post office under Glasgow, with money order, savings bank, and telegraph departments, and a station (1881) on the Caledonian railway. The Established church, erected in 1891, was constituted *quoad sacra* in 1892. An east window was inserted in 1894 to the memory of Alexander Crum, Esq. (1829-93), who founded the church. There are also a U.P. church (1836; renovated 1883), a public school (1878), and a public hall (1879), erected by the Messrs Crum at a cost of £4000. That firm's extensive works, for cotton-spinning, power-loom weaving, calico-printing, and bleaching, were commenced towards the close of the 18th century. The mansion of Thorniebank is the seat of Walter Ewing Crum, Esq. (b. 1865; suc. 1893). Pop. (1841) 1620, (1861) 1839, (1871) 2123, (1881) 2156, (1891) 2097, of whom 1060 were females.—*Ord. Sur.*, sh. 30, 1866.

Thornton, a village in the S of Markinch parish, Fife, near the left bank of the Ore, and 5 furlongs W by S of Thornton Junction on the North British railway, this being $15\frac{1}{2}$ miles ENE of Dunfermline, $30\frac{1}{2}$ N by E of Edinburgh by the Forth Bridge, and $8\frac{1}{2}$ S of Ladybank Junction. It has a post office, a public school, and an Established church, raised to *quoad sacra* parochial status in 1878. About half a mile from the village is the Dysart Combination Poorhouse, erected in 1862 at a cost of about £6000, and capable of receiving 180 inmates. Pop. of village (1861) 527, (1871) 526, (1881) 552, (1891) 607; of *q.s.* parish (1891) 1294, of whom 90 were in Kinglassie, 254 in Dysart, and 950 in Markinch.—*Ord. Sur.*, sh. 40, 1867.

Thornton, a place, with a hotel, in Grange parish, Banffshire, 4 miles E by N of Keith.

Thornton Castle, a mansion in Marykirk parish, Kincardineshire, near the right bank of the Black Burn, 3 miles W of Laurencekirk. An ancient Scottish Baronial edifice, bearing date 1531, but supposed to be partly much earlier, it was repaired about 1822, and greatly improved about 1846. John Strachan, knighted in 1875, obtained from his father the lands of Thornton; and Alexander Strachan of Thornton was created a baronet in 1625. The sixth baronet was Admiral Sir Richard Strachan, G.C.B. (1760-1825), distinguished for his naval services. Alex. Crombie, a successful and much-esteemed advocate and land agent in Aberdeen, acquired the property in 1804. He was succeeded

by his cousin, the Rev. Alex. Crombie, LL.D., F.R.S. (1760-1840), the author of several well-known works; and his grandson, Alex. Crombie, Esq., W.S. (b. 1836; suc. 1877), is present proprietor.—*Ord. Sur.*, sh. 57, 1868.

Thornton Hall, a station on the East Kilbride section of the Caledonian railway, $7\frac{3}{4}$ furlongs SSE of Busby station.

Thorntoun House, a mansion in Kilmaurs parish, Ayrshire, $3\frac{1}{2}$ miles W of Kilmarnock.

Threave Castle, a fine ruin in Balmaghie parish, Kirkcudbrightshire, on an islet formed by the river Dee, 3 miles W of Castle-Douglas. A tall, square, battlemented tower, massive but roofless, it is surrounded by remains of a strong outer wall, with circular towers at the four angles. It was built by Archibald 'the Grim,' third Earl of Douglas, towards the close of the 14th century on the site of a fortalice of Alan, the last native lord of GALLOWAY; and William, eighth Earl of Douglas, kept here in 1451 a retinue of more than a thousand armed men. Threave was the scene in 1452 of the murder of Sir Patrick Maclellan, the tutor of Bombie; and in 1455 it was the last of the Douglas fortresses to surrender to James II., who employed 'Mons Meg' against it—a piece of ordnance said to have been forged at Buchan hamlet in the neighbourhood of the castle. (See DOUGLAS CASTLE, EDINBURGH, and KELTON.) After the fall of the Douglasses, the castle went into the possession of the Crown; but it was afterwards transferred to the family of Maxwell, who became Earls of Nithsdale and hereditary keepers of Threave and stewards of Kirkcudbright. During the troubles of Charles I. the Earl of Nithsdale, at his own expense, held this castle for the King, and armed, paid, and victualled a garrison of 80 men; nor did he flinch, till the king, unable to send him any assistance, instructed him to obtain the best conditions he could for himself and his garrison. The Earls, as keepers of the castle, received from each parish of Kirkcudbrightshire 'a lardner mart cow,' or a fattened cow in condition to be killed and salted at Martinmas for winter provision; and in 1704, when they sold the circumjacent estate, they, for the sake of this perquisite, retained the castle itself. In 1716, at the attainder of the fifth Earl, the levy of the 'lardner mart cow' fell into desuetude; and in 1747, at the abolition of hereditary jurisdictions, the last vestiges of the ancient power and importance of the castle disappeared. Threave House, on Kelton Hill, $\frac{1}{2}$ mile S of Castle-Douglas, is a Scottish Baronial edifice of 1873, the seat of William Gordon, Esq., who acquired the estate of Threave in 1870.—*Ord. Sur.*, sh. 5, 1857. See Maxwell's *Guide-Book to the Stewartry of Kirkcudbright*.

Thrumster House, a mansion in Wick parish, Caithness, $4\frac{1}{2}$ miles SSW of the town. Its owner is Mrs Bentley-Innes (suc. 1854).—*Ord. Sur.*, sh. 110, 1877.

Thurso (old form, *Thorsa*; Scand. *Thors-a*, 'Thor's river'), a parish, containing a town of the same name, and also a river, in the N of Caithness. The parish is bounded N by the Atlantic, E by the parishes of Olrig and Bower, S and SW by the parish of Halkirk, and W by the parish of Reay. The boundary is formed for $2\frac{1}{2}$ miles on the SW by the river Thurso, for $3\frac{1}{2}$ miles on the W by Forss Water, and elsewhere, except on the N, it is artificial. The greatest length, from NW at Brims Ness to SE, at the point where the parishes of Thurso, Bower, and Halkirk meet on the SE side of Sordale Hill, is 10 miles; the greatest width at right angles to this, from Clardon Head to the SW boundary, W of Buckies Hill, is 6 miles; and the area is 28,767·127 acres, of which 368·809 are water, 329·304 are foreshore, and 20·207 are tidal water. A detached portion of the parish, comprising 7074 acres, situated $4\frac{1}{2}$ miles to the SW, running $5\frac{1}{2}$ miles SW from the S end of the Dorery Hills, and having an average breadth of $1\frac{1}{2}$ mile, was transferred by the Boundary Commissioners in 1891 to the parish of Halkirk. The whole surface of the parish is considerably above sea-level, rising from the sea in the N in sheer cliffs, with an average height of over 200 feet, or in high steep banks. From these a moory

plateau passes southward by Brims Hill (300), Holburn Hill (306), Hill of Forss (400), and Cairnmore Hillock (439), and then undulates towards the river Thurso, which has high steep banks on both sides. To the E of the river there is again a rise to Duncan's Hill (216) and Sordale Hill (300), the last in the extreme SE of the parish, and with Buckies Hill (310) to the W on the opposite side of the river. About half the whole area is under tillage, but the greater part of the soil is poor, and of the other half a considerable moiety is barren heathland. The coast, from near the NW corner of the parish at Brims Ness, has a general N and S direction for $4\frac{1}{2}$ miles to Holburn Head, whence it turns southward to Scrabster lighthouse, then curves WSW to Scrabster itself, and thence SE, E, and NE to Clardon Head, forming by this sweep Thurso Bay,* the portion of which to the W is the well-known anchorage of Scrabster Roads. The Bay is $2\frac{1}{2}$ miles wide across the entrance from Holburn Head east-south-eastward to Clardon Head, and $1\frac{1}{2}$ mile deep west-south-westward, at right angles to this line, to the extreme S at the town of Thurso. To the E of Clardon Head is MURKLE BAY. The rocks of the parish are fissile beds belonging to the Old Red Sandstone system, some of which, at Weydale, Forss, and elsewhere, are quarried for the Caithness flags or Caithness pavement, so well known for its smooth surface and its durability. Many of the beds are highly fossiliferous, and those in the neighbourhood of the town of Thurso yielded the fine specimens of *Asterolepis* now in the Hugh Miller and John Miller Collections in the Industrial Museum at Edinburgh. One thin bed, a short distance W of Holburn Head, contains the scarce little crustacean, *Estheria membranacea*. The drainage is carried off by the river Thurso, which, after tracing part of the south-western boundary, as already described, has a course of 5 miles through the parish, till it falls into the S corner of inner Thurso Bay. There is no lake of any size in the parish. The mansions are Forss House, Scrabster House, and Thurso Castle. The last, to the E of the mouth of the river Thurso, is a large and rather staring structure of 1872-78, in a somewhat poor variety of the Baronial style. The height of its main tower is 147 feet. Its predecessor, erected in 1660 by George, Earl of Caithness, was the birthplace and residence of the famous Sir John Sinclair (1754-1835), to whom Scotland owes the *Old Statistical Account*, and also of his daughter, Miss Catherine Sinclair (1801-64). His grandson, Sir John George Tollemache Sinclair of Ulbster, third Bart. since 1786 (b. 1825; suc. 1868), was Liberal member for Caithness from 1869 to 1885. A short distance E of the castle is Harold's Tower, erected by Sir John Sinclair to mark the supposed grave of Harald, grandson of Rögnvald, who was defeated by Harald Maddadson in this neighbourhood in 1196. Near the centre of Scrabster Bay are the ruined remains of the old castle of the Bishops of Caithness, occupying the site of the 'borg' which Harald Maddadson destroyed when he captured Bishop John of Caithness and the principal men of the district in 1201. The neighbourhood was also the scene of an earlier battle in 1040, when Moddan, nephew of King Duncan, was surprised and slain in or about the town by Thorkell Fostri and his Norsemen, and thereafter Thorkell's victorious army proceeded to join Thorfinn and take part in the great battle in MORAY that preceded Duncan's death. There are some traces of a camp at Holburn Head, and remains of Picts' houses or weems at Sordale, Balliemore, Cairnmore, Scrabster Hill, and elsewhere. A little to the W of Holburn Head is a small obelisk called Slater's Monument, erected in memory of Captain M. A. Slater of the Coast Survey, who is supposed to have been thrown from his horse over the cliff close at hand. The parish is in the

* The name is sometimes more widely applied to the whole sweep bounded on the NW by Holburn Head and on the E by Dunnet Head; and embracing on the SE the great sweep of Dunnet Bay. This opening measures 7 miles across the mouth from Holburn Head NE to Dunnet Head, $\frac{7}{8}$ from Dunnet Head SW to the town of Thurso, and 7 from Holburn Head E by S to Dunnet Sands.

presbytery of Caithness and the synod of Sutherland and Caithness, and the living is worth £267 a year. The churches are noticed in connection with the town. Six schools, with total accommodation for 1358 pupils, had (1893) an average attendance of 907, and grants amounting to £1162. Thurso unites with Bower, Canisbay, Dunnet, Halkirk, Olrig, Reay, and Watten to form Thurso poor-law combination, with a poorhouse having accommodation for 149 inmates. The cemetery is on a high bank overlooking the river Thurso, fully half a mile S of the town. It contains a monument to Robert Dick (1811-66), the famous scientific baker of Thurso, whose story has been told by Dr Smiles in *Robert Dick, Geologist and Botanist* (1878). The George-mas and Thurso branch of the HIGHLAND RAILWAY passes NW through the parish to the town, and near it are two main roads from Wick to Thurso. Another road goes westward to Reay, and there are a number of good district roads. The principal proprietor is Sir J. G. T. Sinclair, Bart., of Ulbster. Pop. (1801) 3628, (1831) 4679, (1861) 5561, (1871) 5754, (1881) 6217, (1891) 5825, of whom 2753 were males and 3072 females, while 3936 were in the police burgh. Houses (1891) inhabited 1164, vacant 29, and building 9.—*Ord. Sur.*, shs. 116, 115, 1878.

The river rises near the extreme SW end of the parish of Halkirk among the hills that there form the boundary between Sutherland and Caithness, and flows first NE, and then N, through the centre of the parish of Halkirk, and thereafter near the centre of the parish of Thurso to the sea at the S side of Thurso Bay. The whole length of the course is about 27 miles, of which $19\frac{1}{2}$ are in Halkirk and $7\frac{1}{2}$ in Thurso. The hollow through which it flows in the upper part of its course from SW to NE is called Strath More, and near the centre of it is Loch More. At the point where the stream turns N it receives from Strath Bheag a tributary which drains the northern part of the parish of Latheron, and $5\frac{1}{2}$ miles farther down another joins it from the W, from Loch Calder. The other affluents are neither numerous nor important. The fishing is good, particularly in early spring, when it is excelled by no river in Scotland. There is almost no wood along its course, but the high banks between which the river often runs are by no means devoid of beauty. The boulder clay along them contains at several points comminuted shells.

The town stands on the W bank of the river at the mouth, and has a station at the northern terminus of the Sutherland and Caithness section (1874) of the Highland railway. It is by rail $20\frac{1}{2}$ miles NW of Wick, 154 NNE of Inverness, and 298 N of Perth. By sea it is 25 miles SSW of Stromness, and $30\frac{1}{2}$ SW of Scapa pier, and by road 21 miles from Wick and 44 ENE of Tongue. It seems to have become an important resort of the Norsemen at a very early date, and it soon became the great centre of trade between Scotland and Norway, Sweden, and Denmark. In 1633 it was created a burgh of barony, a status which it still holds, though it is now also a police burgh, and under the Act of 1892 police affairs are managed by a provost, 2 bailies, and 6 commissioners. The superior is Sir J. G. T. Sinclair of Ulbster. For nearly two hundred years after 1633 it was practically the county town of Caithness, the sheriff courts being held and all the ordinary law business of the county transacted there. The superior and magistrates of Wick, having, however, raised an action to show that their rights were being usurped, obtained a decree of the Court of Session in their favour in 1828, and the legal business was then removed to Wick. The old part of the town occupies a triangular piece of ground between the bay and the river, and is irregularly built; but the newer part, to the SW, is regularly laid out. Near the centre of the town is Macdonald Square, in which is a small public garden, originally the private property of the Sinclair family, but presented to the town by Sir John Sinclair in 1876. In the centre is a statue of Sir John Sinclair of *Old Statistical Account*

celebrity, originally erected at Thurso Castle in 1835, but removed to its present position in 1856. The ground was formerly somewhat bare and neglected, but it was laid out and ornamented in 1882-83 at an expense of £213 raised by public subscription. A promenade was formed at the links in 1882. It is over 300 yards long, and the expense of construction was defrayed by the public. The sands to the N of the town form excellent bathing ground. The principal street is Princes Street, formerly High Street, the name having been changed after the visit paid to the town by the Prince and Princess of Wales in October 1876, when His Royal Highness opened an Art and Industrial Exhibition in the Town Hall. The Town Hall, a good Gothic building in Princes Street, contains a courtroom, a public library, and a museum on the ground floor, and on the upper floor a public hall 56 feet 6 inches long, 40 feet wide, and 30 high. It was erected in 1870 at a cost of £2500, obtained partly by public subscription and partly from the proceeds of a bequest of £1000 made by Mr Alexander Henderson several years before. The centre window over the doorway is of stained glass, and shows St Peter—the patron saint of the town—and the arms of Mr Henderson and of Sinclair of Ulbster. The museum contains the collections made by the late Robert Dick, botanist and geologist. The library is carried on under the Public Libraries Act, which was adopted in 1872. The parish church, erected in 1832, after designs by Burns, at a cost of £6000, is a good building, with a tower 140 feet high and a clock, the latter the gift of Mr Henry Miller, London, a native of Thurso. There are 1540 sittings. Near the river are the roofless walls of the old church of St Peter, believed to date from the 14th century, and surrounded by the old burying-ground. There are two Free churches, the First and the West, of which the latter is a handsome building of 1860 with a good spire. The Congregational church, erected in 1875-76 at a cost of £1100, replaced an old church dating from 1799. There are also an Original Secession church and a Reformed Presbyterian church. The Scotch Episcopal church (St Peter and the Holy Rood) is a Gothic structure erected in 1884, containing 192 sittings. There is a public school, an institution in Sinclair Street endowed by Mr Alexander Miller for the education of boys, and a Free Church school. The Dunbar Hospital, opened in 1885, and costing £6000, originated in a bequest by Mr Alexander Dunbar, Scrabster, who died in 1859. The foundation stone of the building was laid by the Duke of Edinburgh in 1882. There is regular railway communication with the south, and the mail steamer sails between Orkney and Scrabster daily, and between Scrabster and Leith once a week. There is a small harbour at the mouth of the river, ranking as a creek under Wick, but it is neither convenient nor safe. Vessels of any burden may find shelter in the bay in any weather, and few places afford better refuge than Scrabster Roads; but the want of a better pier is much felt, as vessels intending to enter must wait the tide before they can cross the bar. The principal exports are grain and paving-stone. The harbour at Scrabster is separately noticed. The only industry of any importance is in connection with the trade in Caithness flags, the sawing, dressing, and polishing of which is carried on extensively; and there is good fishing in Dunnet Bay. Thurso has a post office, with money order, savings bank, insurance, annuity, and telegraph departments; branch offices of the Bank of Scotland, British Linen Company, Commercial, National, and Town and County Banks; a branch of the National Security Savings Bank, a mechanics' institute and café, an agricultural society, an ornithological society, a literary association, artillery and rifle drill halls, a cemetery, bowling and lawn tennis clubs, a newspaper, the Independent *Caithness Courier* (1866), published every Friday, and several good hotels. Gas is supplied by a private company, and new gasworks were erected in 1880. As a result of a fever epidemic in 1894 a call was made for new drainage works and an additional water-supply pipe from the Loch of Calder.

There is a weekly market on Friday, and there are fairs on the second Tuesday of July (Petermass), and the Friday in August after Dunnet. Sheriff small debt courts are held ten times a year, *i.e.*, once every five weeks, on Thursdays; and justice of peace small debt courts are held every second Wednesday. Pop. of town (1841) 2510, (1861) 3426, (1871) 3622, (1881) 4055, (1891) 3936, of whom 1797 were males and 2139 females. Houses (1891) occupied 799, unoccupied 9, and being built 9.

Thurston, a plain two-storey mansion, in Innerwick parish, Haddingtonshire, near the right bank of the Dry Burn, 5 miles SE of Dunbar.

Tibbermore, a parish of Perthshire, containing ALMONDBANK station, HUNTINGTOWER and Ruthvenfield village, and a small portion of the royal burgh of PERTH. It is bounded N by Methven and Redgorton, E by Scone and Perth, S by Aberdalgie and Forteviot, and W by Findo-Gask. Its utmost length, from ENE to WSW, is 6½ miles; and its breadth varies between 6¼ furlongs and 2½ miles. The parish until 1891 had two detached parts, the one situated at Tullylumb comprising 96 acres, and that situated at York Place, Perth, comprising only 4 acres. In that year the Boundary Commissioners transferred to the parish of Perth the whole of the latter portion, which lay entirely within the parliamentary and municipal boundary of the burgh of Perth, and so much of the former portion as lay within the same boundary. They at the same time, however, transferred to Tibbermore parish that part of the parish of Perth which lay north of the Scouring Burn and west and north of the west and north burgh boundaries. The ALMOND winds 2½ miles east-north-eastward along all the Redgorton border, till it falls into the TAY, which itself flows ½ mile south-eastward along all the boundary with Scone. Beside the Almond the surface declines to less than 50 feet above sea-level; and thence it rises to 223 feet near Hillyland, 257 near Hill of Ruthven, and 467 near the Forteviot border. Thus, without being hilly, the parish is considerably diversified. In the western district it descends in a gentle slope to the N, and terminates in a narrow tract of level ground; and in the eastern district it in general lies somewhat high above the Almond, and then, going down in a steep descent, forms a delightful plain along the margin of the stream. The district is in general fertile; and to a large extent, especially on the E and S, is beautified with wood. The arable grounds, comprising nine-tenths of the entire area, have a various soil—a sandy loam along the Almond, an argillaceous earth toward Perth, and a reclaimed substratum of moss in many parts of the W. Old Red Sandstone is the prevailing rock, and has been largely quarried. At Ruthvenfield, in the NE of the parish, there are extensive bleaching works. Letham mansion, 2 miles WNW of Perth, was built about 1880. The chief objects of antiquity and the chief manufactures have been noticed under HUNTINGTOWER. Tibbermore (or Tippermuir), though containing less of the battlefield than Aberdalgie, has given name to the first battle fought between the Marquis of Montrose and the Covenanters (1 Sept. 1644)—a battle in which the latter confronted 1700 Highlanders and Irishmen with 6000 foot and 600 horse, but were completely vanquished, and suffered a loss of 2000 slain and 2000 captured. Tibbermore was the residence of several of the bishops of Dunkeld, particularly of Bishops Geoffrey and Sinclair, who died in 1249 and 1337. Bishop Sinclair is noted in history for an exploit against the English in the reign of Robert Bruce. The earliest parish church of Tibbermore was originally a chapel dedicated to St Serf or Servanus, and situated on the N side of the Almond, within the present boundaries of Redgorton. At Tullylumb, in the E end of Tibbermore, anciently stood a convent of Carmelites; and beside it Richard Inverkeithing, Bishop of Dunkeld, built, in 1262, a chapel and a house. Here the synods of Dunkeld diocese were held till 1460, when they were removed by Bishop Thomas Lauder to his own cathedral. Alexander Young was the last prior of the convent, and

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on his embracing the Protestant religion at the Reformation he became minister of Tibbimore. The name Tibbimore signifies 'a great well,' and probably alludes to a perennial spring which issued from behind the church, and was long known by the name of the 'Lady Well,' but which, not long before 1848, was destroyed by the draining of the adjacent field. The father of Principal Tulloch was minister from 1833 to 1844. The Earl of Kinnoull owns about three-fifths of the parish. Giving off a small portion to the *quoad sacra* parish of St Leonard, Tibbimore is in the presbytery of Perth and the synod of Perth and Stirling; the living is worth £249. The parish church, 2 miles SW of Almondbank station, is a pre-Reformation building, the dates 1632 and 1808 on the belfry—which is a curious structure, much admired by some ecclesiologists—being those of repairs, and not of its erection. As enlarged by a N aisle in 1810, it contains 600 sittings. Two public schools, Ruthvenfield and Tibbimore, with respective accommodation for 218 and 152 children, had (1893) an average attendance of 98 and 50, and grants of £90, 16s., and £51, 12s. Valuation (1885) £11,617, 17s. 11d., (1892) £13,823, 11s. 9d. Pop. (1801) 1306, (1811) 1223, (1841) 1651, (1861) 1296, (1871) 1563, (1881) 1833, (1891) 1692, of whom 211 were in the royal burgh of Perth; of ecclesiastical parish (1881) 1832, (1891) 1928.—*Ord. Sur.*, sh. 48, 1863.

Tibbers, an ancient castle adjacent to the mutual boundary of Penpont and Durisdeer parishes, Dumfriesshire, at the influx of Park Burn to the river Nith, opposite Carronbridge and 2½ miles NNW of Thornhill. Supposed to have been built by the Romans, and named in honour of Tiberius Caesar, it was garrisoned by the English in the early part of the Wars of the Succession, and surprised and captured by Sir William Wallace; and it is now represented by only slight vestiges.—*Ord. Sur.*, sh. 9, 1863.

Tibbie Shiels. See ST MARY'S LOCH.

Tifty. See FYVIE.

Tighnabruaich (Gael. 'house on the edge of the bank'), a recent watering-place in Kilfinan parish, Argyllshire, on the Kyles of Bute, 2½ miles SW of the mouth of Loch Riddon and 9½ (by water) NW of Rothesay. It has a post office, with money order, savings bank, and telegraph departments, a branch of the Royal Bank, 2 hotels, a steamboat pier, an Established church (made *quoad sacra* in 1882), a Free church, and a public school. A stained-glass window was inserted in the parish church in 1890, a manse was built in 1891 at a cost of £1050, and in 1894 a church hall, with side-rooms, was erected at Kames at a cost of £900. Pop. (1871) 404, (1881) 771, (1891) 615.—*Ord. Sur.*, sh. 29, 1873.

Tillery House. See FOVERAN.

Tillichewan Castle. See BONHILL.

Tillicoultry, a town and a parish of Clackmannanshire. The town lies at the southern base of the Ochils, on Tillicoultry Burn, and within ½ mile of the right bank of the Devon, 2 miles E of Alva, 3½ NNE of Alloa, 3½ W by S of Dollar; whilst its station, on the Devon Valley section (1851-71) of the North British railway, is 10 miles ENE of Stirling, and 13½ WSW of Kinross. The Queen, who passed it by train on 20 June 1879, describes its 'situation, in a wooded green valley at the foot of the hills,' as 'beautiful, reminding me of Italy and Switzerland.' Since about 1830 Tillicoultry has grown from a village to a thriving town, such growth being due to the great extension of its woollen manufactures. These date, indeed, from the days of Queen Mary, and long made Tillicoultry serges and blankets famous throughout Scotland; but the weaving of tartans and shawls was not introduced till 1824, and the manufacture of tweeds and silk fabrics is of still later origin. About a dozen factories are now engaged in the woollen industry, and employ a great number of the inhabitants. The town has a post office, with money order, savings bank, and telegraph departments, branches of the Clydesdale and Union Banks, 2 hotels, gasworks, a police station, a cemetery, a horticultural society, a

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bowling club, Young Men's and Young Women's Christian Associations, and a Wednesday Liberal paper, the *Tillicoultry News* (1879). The Popular Institute and Library, with accommodation for 1000 people, was erected in 1860, and a handsome tower and spire, with clock and bell, were added in 1878. In 1879 an orphanage, accommodating from thirty to forty inmates, was gifted to the town by the late James Paton, Esq., who also bequeathed £5000 towards its endowment. A stretch of ground known as the Gallop'n Course Park, of about 9 acres in extent, was leased in 1888 as a public park. The parish church (1829) stands ¼ furlongs E by S of the centre of the town. A new session-house and hall were erected in 1889. The Free church was built soon after the Disruption; and other places of worship are the U.P., the Evangelical Union, the Baptist, and the Congregational church, the last erected in 1876 at a cost of £3000. The town, under the Burgh Police Act of 1892, is governed by a provost, 2 bailies, and 6 commissioners. Pop. of town (1851) 3217, (1861) 3684, (1871) 3745, (1881) 3782, (1891) 3939, of whom 2155 were females. Houses (1891) inhabited 908, vacant 29, building 1.

The parish, containing also the villages of COALS-NAUGHTON and DEVONSIDE, is bounded N and NE by Blackford and Glendevon in Perthshire, E by Dollar, SE and S by Clackmannan, SW by Alloa, and W by Alva. Its utmost length, from NNW to SSE, is 6½ miles; its breadth varies between 7½ furlongs and 2½ miles; and its area is 6976½ acres, of which 30½ are water. The DEVON first, a little below its source, flows 1½ mile east-by-northward along the northern border, and then, much lower down, winds 3½ miles west-south-westward across the southern interior. GLOOMINGSIDE or Gannel Burn, rising at 1650, and Daiglen Burn, rising at 1500, feet above sea-level, run 1½ mile south-south-westward and 1½ mile south-south-eastward, until, at an altitude of 1650 feet, they unite to form Tillicoultry Burn, which itself flows 1½ mile south-by-westward to the Devon at Glenfoot. Greenhorn and Broich Burns run northward along the Alva and Blackford and the Glendevon boundaries to the Devon, four others of whose affluents have a southerly course, either through the interior or along the eastern and western borders. The scenery of these little mountain rivulets, with their pools, cascades, and wooded banks, is almost as fair to-day as it was in that olden time when the wife of the miller of MENSTRIE was spirited away by the fairies. In the valley of the Devon the surface declines to less than 50 feet above sea-level; and thence it rises southward to 327 feet near Shannockhill, northward to 1000 at Wester Kirk Craig, 2094 at The Law, 2111 at King's Seat Hill on the Dollar boundary, 2363 at BENCLEUGH (the loftiest summit of the OCHIL HILLS), and 1724 at Burnfoot Hill, from which it again declines to close on 1000 feet at the northern border. The entire landscape, whether we view the hills or the plain, is pleasant and beautiful. A rising-ground, called the Kirk Craig and the Cuninghar, which closes a fine plain stretching out to it from the Abbey Craig near Stirling, has a strikingly romantic appearance as approached from either the E or the W, and is supposed to be 'the mount at the back of the country,' the *tulaich-cul-tir*, whence the parish derived its name. The rocks are mainly eruptive in the hills, carboniferous in the plain. Red and grey porphyries compose the summits of the central and loftiest heights; and they exhibit some very fine varieties, and contain large crystals of black schorl. Clay-slate is a prevailing rock in the King's Seat chain; and basaltic rocks, in some instances containing curious decomposed masses, occur on the lower heights. Micaceous schist, too, is found, containing numerous garnets. Some veins of copper ore were worked towards the middle of the 18th century; but, after the expenditure upon them of a very great sum of money, were abandoned as not defraying the cost of mining. Silver, lead, cobalt, arsenic, and sulphur seem also to exist, but in small quantities. A rich variety of ironstone, and rich veins of iron ore of the kidney kind, are in sufficient quantity to have been

an object of marked attention to the Devon Company. A stratum of dark-blue clay, suitable for fire-bricks, occurs; and on the banks of the Devon are singular concretions of hardened clay in a great variety of fantastic shapes. Sandstone, of good quality, occurs on the skirts of the hills and in the plain, and has been largely quarried. Coal, in four workable seams, and of various quality, occurs in the same district as the sandstone, and is the object of extensive mining and traffic. The soil at the foot of the hills is a fine quick loam, of no great depth; on the haughs of the Devon is a deep loam mixed with sand; and in other parts is now loamy, now argillaceous, on a variety of subsoils. Much of the ground is stony; but in many fields where little soil can be seen, on account of a thick powdering of quartzose nodules, it is, nevertheless, of high fertility. Antiquities are remains of a Caledonian stone-circle on the SE end of the Kirk Craig, and of a circular fort on the basaltic eminence of Castle Craig. Near the former, in 1862, two urns containing human bones were found while making certain excavations. At 'Tillicultrin' St Serf is said to have wrought many miracles, one of them the raising of a woman's two sons 'frae ded to iyl.' Tillicultry House, 1 mile ENE of the town, is an elegant mansion, erected about 1806. The estate was granted by Alexander III., in 1263, to an ancestor of the Earl of Mar and Kellie, and in 1483 came to the Colvilles of Culross, of whom Sir James Colville served with much distinction in the French wars under Henri of Navarre, and was created Lord Colville in 1609. In his latter years he spent much of his time at Tillicultry. One day in 1620, while describing his battles, he fell down the sloping bank of a terrace, and, it is said, was killed on the spot. His grandson sold the property in 1684 to the poet, Sir William Alexander of Menstrie, afterwards Earl of Stirling; since then it has changed hands no fewer than twelve times. The present owner is Robert George Wardlaw-Ramsay, Esq. of WHITEHILL (b. 1852; suc. 1882). HARVESTOUN, with its memories of Burns and of the late Archbishop Tait, has been noticed separately. Tillicultry is in the presbytery of Dunblane and the synod of Perth and Stirling; the living is worth upwards of £330. Two public schools, Coalsnaughton and Tillicultry, with respective accommodation for 292 and 924 children, had (1893) an average attendance of 225 and 654, and grants of £222, 10s. and £691, 10s. 6d. Valuation (1885) £19,685, 8s. 7d., (1892) £19,332, 0s. 9d. Pop. (1801) 916, (1831) 1472, (1841) 3213, (1861) 5054, (1871) 5118, (1881) 5344, (1891) 5695.—*Ord. Surv.*, sh. 39, 1869.

Tillicheewan Castle. See BOXHILL.

Tillietudlem. See CRAIGNETHAN.

Tillyangus. See CLATT.

Tillyfour. See TOUGH.

Tillynaught Junction, a station in Fordyce parish, Banffshire, on the Great North of Scotland railway, 6 miles WSW of Banff, 2½ SSE of Portsoy, and 10¼ NNE of Grange Junction.

Tillypronie, a fine modern mansion in Logie-Coldstone parish, Aberdeenshire, 4 miles NW of Tarland village and 10 NNW of Aboyne. Its owner is Sir John Forbes Clark, second Bart. since 1837 (b. 1821; suc. 1870).—*Ord. Surv.*, sh. 76, 1874.

Tilt, a small alpine lake and a mountain rivulet, in Blair Athole parish, Perthshire. Loch Tilt (3 × 1½ furl.; 1650 feet above sea-level) lies among the central Grampians, within ¼ mile of the Aberdeenshire boundary, and ½ miles E by S of the meeting-point with Invernesshire. It is overhung by mountains rising to altitudes of from 2131 to 2515 feet. The rivulet, issuing from the lake, is joined within ½ mile by a mountain torrent, descending from the E; proceeds 1½ mile south-south-westward, until it receives, on the right, TAFE WATER; then goes 1½ miles south-westward, for the most part along a deep narrow alpine glen, 'a ditch to guard and separate a world,' flanked on most of the left side by BENGLO (3671 feet); receives in its progress hundreds of torrents and cataractine rills; becomes, in its lower reach, intricately, picturesquely,

romantically grand; is joined, at one of its most magnificent points, by FENDER Burn, making three very fine cascades; and enters the Garry, amid most splendid scenery, at Bridge of Tilt. Its waters are strictly preserved, and swarm with trout. See GLENTILT.—*Ord. Surv.*, shs. 64, 55, 1874-69.

Tilt, Bridge of. See BLAIR ATHOLE.

Tima Water, a troutful hill-stream of Ettrick parish, Selkirkshire, rising on the Dumfriesshire boundary at an altitude of 1300 feet, and running 6½ miles north-eastward and northward, till, after a descent of 525 feet, it falls into Ettrick Water at Ramseyelunch, 1 mile E of Ettrick church.—*Ord. Surv.*, sh. 16, 1864.

Tingwall, a parish of Shetland, whose church stands near the head of Tingwall Loch, 6 miles WNW of Lerwick, under which there is a post office. Containing also the seaport and post-office village of SCALLOWAY, the parish is bounded N by Delting, NE by Nesting, E by the sea, SE and S by Lerwick, and W by the sea and Sandsting. It includes the inhabited islands of Hildesay, Langa, Linga, Oxna, and Trondra; and comprises the ancient parish of Weisdale on the N, Whiteness in the centre, and part of the ancient parish of Tingwall on the S, having till 1701 comprehended likewise the Lerwick-proper district of Lerwick parish. Its utmost length, from N to S, is 13½ miles; its utmost breadth, from E to W, is 4½ miles; and its land area is 45½ square miles or 29,206 acres. No part of it is more than 2 or 3 miles from the sea, so deeply are its coasts indented with voes or firths—Wadbister Voe, Lax Firth, and Dales Voe on the E; Clift Sound on the S; and Whiteness, Stromness, and Weisdale Voes on the W. A ridge of hills, extending from N to S, divides the parish into two distinct districts, and attains 921 feet at Scalla Field, 511 at Hamarsland Hill, 442 at Herriesle Hill, and 418 at Steinswall Hill. Each of these districts is disposed in straths, nearly parallel with the ridge. The soil is either moss or a dark-coloured loam; and the moss generally lies on a ferruginous subsoil, which is naturally impervious to water, and for some years resists the plough, but yields to persevering tillage, and enriching mingles with the soil. Much waste land has of late years been reclaimed. In all the straths is abundance of primitive limestone, and the hills on the eastern side consist of clay and mica schists. Near Rova Head is a bed of good blue roofing slate, and in several of the meadows are beds of excellent shell-marl. Of a score of fresh-water lakes and lakelets, the largest are the Loch of Girsta (1½ mile × 3 furl.), Strom Loch (2½ miles × 2½ furl.), and Tingwall Loch (8½ × 2½ furl.). All afford good trout-fishing; and on an islet, called Lawting, in the last, the 'Grand Fond' anciently held his supreme court, and heard appeals. Hence the name Tingwall (Norse *Thingvöllr*, 'a field or place where courts are held'). On an islet in Strom Loch is the ruin of a small fortalice, said to have been inhabited by a noble, whose father, a Jarl of Orkney, ordered him to be put to death. Tumuli and flint implements are numerous. Tingwall was anciently an archdeaconry, and for upwards of a century after the Reformation either itself or the village of Scalloway gave name to the Shetland presbytery. The ancient churches of Weisdale and Whiteness were dedicated respectively to the Virgin Mary and St Olaf; and so powerful was the hold which Catholicism had on the entire parish, that, as we learn from the *New Statistical Account*, there are 'remains of a very great many pre-Reformation chapels.' Tingwall is in the presbytery of Lerwick and the synod of Shetland; the living is worth £319. There are two parish churches, each containing about 570 sittings—the one at Tingwall, built in 1789; the other at Whiteness, by Strom Loch, built in 1837. There is a Free church at Weisdale. Six public schools—Girsta, Gott, Scalloway, Trondra, Weisdale, and Whiteness—with total accommodation for 401 children, had (1893) an average attendance of 241, and grants amounting to £328, 9s. 6d. Valuation (1884) £4577, 13s. 6d., (1893) £4787, 19s. 9d. Pop. (1881) 2385, (1891) 2329, of whom 2099 belonged to the Mainland portion.

Tinto, a big porphyritic hill at the meeting-point of Carmichael, Wiston, Symington, and Covington parishes, Lanarkshire, flanking the left side of a detour of the river Clyde, and culminating $7\frac{1}{2}$ miles SE of Lanark, $2\frac{3}{4}$ WSW of Symington Junction. Standing alone, and dominating like a king over the Upper Ward, it is the loftiest of the 'Southern Heights of the Central Lowlands,' and attains an altitude of 1655 feet above the Clyde at its base, and 2385 feet above the sea. Its base is $6\frac{1}{2}$ miles in length from E to W, and $2\frac{3}{4}$ in breadth from N to S; and it rises at first slowly, afterwards more rapidly, to a massive domical summit. It figures very conspicuously throughout a great extent of landscape, and commands a view along the Clyde to the Grampians and Goatfell, together with side views to the Bass, to Cumberland, and to Ireland; it consists of eruptive rocks overapping Silurian and Devonian rocks; on its SE skirt is the fragment of the ancient castle of **FATLIPS**; and its summit is crowned by a huge cairn of probably the ancient Caledonian times. Long a beacon post and a place of Beltane fires, it took thence its name of Tinto, signifying the 'hill of fire'; it is believed to have been also a scene of ancient Caledonian heathen worship; and, as to either its grand appearance, its antiquarian associations, or its fancied connection with popular myths, it figures in many old-world rhymes, one of which ('On Tintock tap there is a mist,' etc.) is finely moralised in Dr John Brown's *Jeems the Door-keeper*.—*Ord. Sur.*, sh. 23, 1865.

Tinwald, a Dumfriesshire parish on the mutual border of Nithsdale and Annandale. It comprehends the ancient parishes of Tinwald and Trailflat, united in 1650; and contains the small post-office village of **AMISFIELD**, with a station on the Caledonian railway, 4 miles NNE of the post-town, Dumfries. It is bounded NE by Kirkmichael, E by Lochmaben, S by Torthorwald, SW by Dumfries, and W and NW by Kirkmahoe. Its utmost length, from N by W to S by E, is $5\frac{1}{2}$ miles; its utmost breadth is $4\frac{1}{2}$ miles; and its area is 10,391 $\frac{1}{2}$ acres, of which 109 are water. The Water of Ae flows 5 miles east-south-eastward along or close to all the Kirkmichael boundary; **LOCHAR** Water or Park Burn, its head-stream, runs $6\frac{1}{2}$ miles south-south-eastward along all the boundary with Kirkmahoe and Dumfries; and several burns rise in the interior, and run to either the Ae or the Lochar. Along the Water of Ae the surface declines to less than 200, along Lochar Water to less than 100, feet above sea-level. The tract adjacent to the latter stream appears to have formed part of an estuary in times subsequent to the human occupation of the surrounding country; comprises a belt about 1 mile long and $\frac{1}{2}$ mile broad, reclaimed from moss into remarkably fine meadow; and includes a sandy ridge of some 35 acres, called Tinwald Isle, once surrounded with such depth of estuarial water as to have served the purpose of a commodious harbour. About three-fourths of the entire area are occupied by hilly heights, which, rising slowly from the low flat grounds, have diversified shoulders and an undulating tabular summit, are either ploughed or verdant over nearly all their surface, and attain a maximum altitude of 818 feet above sea-level at High Auchnane. They command brilliant views over all the lower basin of the Nith from Queensberry to Criffel, and across the Solway Firth to Skiddaw; and they pass, at the southern boundary, into the continuous but lower heights of Torthorwald and Mouswald. A lake, called Murder Loch, was once of considerable size and great depth, but has been much reduced by draining, and now is nowhere more than 18 feet deep. The predominant rocks are greywacke and greywacke slate. The soil, to some extent, is either reclaimed moss, sandy gravel, or stiff moorish clay; but is mainly a loamy or friable clay, much mixed in places with small stones. Woods cover a considerable area; about 2150 acres are meadow, pasture, or waste; and the rest of the parish is in tillage. Tinwald House, on the western skirt of the hills, $\frac{1}{2}$ mile SE of Amisfield village, was once a seat of the Marquis of Queensberry, but is now a farmhouse;

the Queensberry estate in Tinwald and Torthorwald was sold in 1834 to James Jardine, Esq. of Dryfeholm, and is now owned by his son, David Jardine, Esq. (b. 1847; suc. 1893). Mansions, noticed separately, are **AMISFIELD** House and **GLENÆ**; and the principal antiquities are Amisfield Castle, adjoining Amisfield House, vestiges of four ancient forts at Amisfield, Shieldhill, High Auchnane, and Barrshell Hill, and traces of a Roman road by Trailflat, towards Burnswark. William Paterson (1655-1719), the projector of the Darien colony and the Bank of England, was born at Skipmire farm, as also was his grand-nephew, Dr James Mounsay, first physician for many years to the Empress of Russia. Tinwald is in the presbytery and synod of Dumfries; the living is worth £200. The parish church was built in 1763, and contains 400 sittings. Two public schools, Amisfield and Shieldhill, with respective accommodation for 146 and 68 children, had (1893) an average attendance of 93 and 54, and grants of £93, 6s. 6d. and £66, 2s. Pop. (1801) 980, (1831) 1220, (1861) 1079, (1871) 993, (1881) 861, (1891) 902.—*Ord. Sur.*, sh. 10, 1864.

Tippermuir. See **TIBBERMORE**.

Tiree. See **TYREE**.

Tirry. See **LAIRG**.

Tobermory, a seaport village in the N of Mull island, Argyllshire, 28 miles WNW of Oban, and $2\frac{1}{2}$ W by S of the nearest point of the Morvern mainland. It stands at the head of a sheltered bay, on the SW side, and towards the north-western entrance of the Sound of Mull; and it was built in 1788, at the same time as Ullapool, by the British Fisheries Company, as the site of a fishing establishment, and the rendezvous of the herring vessels. Its name means 'Mary's Well,' and was taken from a fountain on the spot, which was dedicated to the Virgin, and had much celebrity in pre-Reformation days. The chief part of the town is arranged in the form of a crescent; but an upper town, surmounting a cliff to the rear, consists almost wholly of cottages or huts, though a number of villas have been recently built on the outskirts. The harbour or bay is spacious, and almost completely landlocked; and is sheltered across the entrance, and at a brief distance, by Calve Island. A quay and pier, constructed at a cost of over £2000, was opened in 1864. As the only town in Mull, and in a large circumjacent district, both Hebridean and continental, Tobermory possesses much provincial importance, and is the seat of some domestic trade. As a seaport, it is the natural outlet of the surplus produce of northern Mull; and enjoys regular steamboat communication with Oban, the Clyde, etc. It has a post office, with money order, savings bank, and telegraph departments, branches of the Clydesdale and North of Scotland Bank, a Scottish Baronial courthouse (1862), a public school, a girls' industrial school, a poorhouse, distillery, six hotels (two of them temperance), agricultural and horticultural societies, a mutual improvement society, etc. The Temperance Institute, the gift of Alex. Allan, Esq. of Aros, includes a reading-room well supplied with newspapers, etc., billiard room, circulating library, and hall accommodating between 300 and 400 persons. A new water supply was introduced in 1882 at a cost of over £6000. Places of worship are the *quoad sacra* parochial church (1827-28), in connection with which a church hall and vestry were erected in 1890; a Baptist chapel (1816), and a new Free church (1878-79). The last is an Early English edifice, built at a cost of over £3400, with a tower and spire, and 500 sittings. The *quoad sacra* parish, which was constituted ecclesiastically in 1827, and politically in 1845, is in the presbytery of Mull and the synod of Argyll; its minister's stipend is £200 with manse. The town is a police burgh, and under the Burgh Police Act of 1892 is governed by a provost, 2 bailies, and 6 commissioners. Its prison was closed in 1834. The 'Florida,' one of the ships of the Spanish Armada, in 1588 was blown up in Tobermory Bay (see **INVERARAY**), where the ill-fated Earl of Argyll put in on 11 May 1685, and where the Queen passed the night of 19 Aug. 1847 on board the

royal yacht. Pop. of village (1841) 1396, (1851) 1543, (1871) 1196, (1881) 1200, (1891) 1154, of whom 961 were Gaelic-speaking and 626 females; of *g. s.* parish (1871) 1344, (1881) 1342, (1891) 1265. Houses in town (1891) inhabited 260, vacant 13.

Toberonichy, a village on the E side of Luing island, Argyllshire, $7\frac{1}{2}$ miles S of Easdale. There is a mission station in connection with the Scotch Episcopal Church. Services are held in the village hall.

Todhills, a hamlet in Tealing parish, Forfarshire, 6 miles N by E of Dundee.

Tollcross, a town in the north-western parliamentary division of Lanarkshire, 2 miles SE of Glasgow, under which it has a post office, with money order, savings bank, and telegraph departments. It comprises two portions—Tollcross in Barony parish, and Fullarton in Old Monkland parish. Lying on the main road between Glasgow and Hamilton, it consists of one broad street and several narrow ones branching off from this. The inhabitants are chiefly employed in the neighbouring collieries and ironworks, and the houses are generally plain one-storey buildings with garden plots in the rear. A number of villas have, however, been erected both at the E and W ends of the town, which contains a Free church, a U.P. church, a public school, and a Roman Catholic church and school. Pop. (1881) 3546, (1891) 3856, of whom 3200 were in Tollcross and 656 in Fullarton.

Tolquhon Castle. See TARVES.

Tolsta, a village, with a public school, in Stornoway parish, Lewis, Ross and Cromarty, near Tolsta Head, 13 miles NNE of the town of Stornoway. Pop. (1871) 566, (1881) 597, (1891) 699.

Tomachaistel. See MONZIEVAIRD.

Tomatin, a mansion in Moy and Dalarossie parish, Inverness-shire, near the left bank of the winding Findhorn, 16 miles SE of Inverness, under which there is a post and telegraph office of Tomatin.

Tombae, a place, with the Roman Catholic Church of the Incarnation (1829; 300 sittings), in Inveraven parish, Banffshire, near the right bank of Livet Water, $4\frac{1}{2}$ miles SSE of Glenlivet post office.

Tomich, a place in Kiltarlity parish, Inverness-shire, 23 miles SW of Beaulieu, under which it has a post office.

Tomintoul, a village and a *quoad sacra* parish in Kirkmichael parish, Banffshire. The village stands, 1100 feet above sea-level, on a small plateau, with the river Aven to the W and Conglass Water to the E. It is $14\frac{1}{2}$ miles S of Ballinalloch station, this being 12 miles NE of Grantown and 12 SW of Craigellachie. A coach runs daily between Tomintoul and Ballinalloch station. Consisting of a central square and a single street, running $\frac{3}{4}$ mile north-north-westward, it is described by the Queen, under date 5 Sept. 1860, as 'the most tumble-down, poor-looking place I ever saw—a long street with three inns, miserable dirty-looking houses and people, and a sad look of wretchedness about it. Grant told me that it was the dirtiest, poorest village in the whole of the Highlands.' Tomintoul has a post office, with money order, savings bank, and telegraph departments, the Stewart Library, a public and a Roman Catholic school, cattle fairs on the Tuesday of April after Beaulieu, the Tuesday after the second Wednesday of May, the Tuesday after the third Wednesday of June, the Tuesday after the third Thursday of July, and the day in August, September, and October after Grantown, a market, called the Well Market, on the last Thursday of July, *o. s.*, and hiring fairs on 26 May and 22 November if the day be a Thursday, and if not, on the Thursday before. The *quoad sacra* parish, constituted by the General Assembly in 1833, and reconstituted by the Court of Teinds in 1845, is in the presbytery of Abernethy and synod of Moray. The stipend is £120, with a manse. The parochial church, built in 1826 with funds from Government, was renovated in 1877, and contains 336 sittings. A mission hall was opened in 1889. St Michael's Roman Catholic church was built in 1837, and contains 368 sittings. Pop. of village (1839) 530, (1861) 659, (1871) 533, (1881) 478, (1891)

506; of *g. s.* parish (1871) 799, (1881) 686, (1891) 695.—*Ordn. Sur.*, sh. 75, 1876.

Tomnachaistel. See MONZIEVAIRD.

Tomnahurich. See INVERNESS.

Tomnavoulin, a place, with a public school and post office under Craigellachie, in Inveraven parish, Banffshire, on the left bank of Livet Water, 8 miles S by E of Ballinalloch station.

Tonderghe, an estate, with a mansion, in Withthorn parish, Wigtonshire, 3 miles S of the town.

Tong, a village, with a public school, in Stornoway parish, Lewis, Ross and Cromarty, 4 miles NNE of the town of Stornoway. Pop. (1871) 402, (1881) 454, (1891) 539.

Tongland, a hamlet and a parish of S Kirkcudbrightshire. The hamlet lies on the right bank of the river Dee, $2\frac{1}{2}$ miles SSW of Tarff station, and $2\frac{1}{2}$ NNE of Kirkcudbright, under which it has a post office.

The parish contains also Tarff station on a branch (1864) of the Glasgow and South-Western railway, $3\frac{1}{2}$ miles N of Kirkcudbright and $6\frac{1}{2}$ SW of Castle-Douglas; and Ringford village, 1 mile N by E of Tarff station, with an inn and a post office. Comprising the ancient parishes of Tongland and BALNACROSS, it in outline resembles a triangle with southward apex, and is bounded N and NE by Balmaghie, SE by Kelton and Kirkcudbright, and SW by Twynholm. Its utmost length, from N to S, is $5\frac{1}{2}$ miles; its utmost breadth, from E to W, is $4\frac{1}{2}$ miles; and its area is 9849 $\frac{1}{2}$ acres, of which $34\frac{1}{2}$ are foreshore and 77 water. The DEE, here a splendid salmon river, flows 5 miles south-westward along all the Kelton and Kirkcudbright boundary; and troutful Tarff Water, formed in the NW angle of the parish by the confluence of Glengap and Anstool Burns, winds $5\frac{1}{2}$ miles, chiefly south-by-eastward, through the interior, then 2 miles south-south-eastward along the Twynholm boundary, till it falls into the Dee near Comptone House. The Dee is spanned, a little below the hamlet, by the old two-arch bridge of 1787, and 3 furlongs lower down, by the railway viaduct and by Telford's bridge, which, with a span of 110 feet, consists of one circular arch, and was constructed in 1804-8 at a cost of £7710. The rocky turbulent reach between the bridges is described in Montgomery's *Cherrie and the Slae* (1595). Limpid Tarff Water, at a point $2\frac{1}{2}$ miles NNW of Ringford, forms a picturesque series of falls, the Linn of Lairdmannoch, from 50 to 60 feet high. Culcaigrie Loch ($2 \times 1\frac{1}{2}$ furl.; 375 feet) lies on the boundary with Twynholm, and Bargatoun Loch ($3\frac{1}{2} \times 2\frac{1}{2}$ furl.; 250 feet) on that with Balmaghie. At the southern extremity of the *tongue of land* between Tarff Water and the Dee the surface declines to less than 100 feet above sea-level; and thence it rises northward to 326 feet at Argrennan Hill, 719 at Kirkconnell Moor, and 588 at Barstobrick or Queen's Hill. The southern district consists of a hilly ridge running N and S, and of gradual declivities sloping down to the rivers. The northern division is rocky and moorish, and consists of a medley of small hills, rising-grounds, valley-land, moss, and meadow. A tract along both margins of Tarff Water is fine flat alluvial ground, naturally rich meadow. The predominant rocks are porphyry and clay slate; whilst the soil of the arable lands is very various, but, in general, especially in the southern and central districts, is fertile in either grain or grass. Less than one-fourth of the entire area is constantly in tillage; and most of the remainder is meadow, hill-pasture, or waste. On the rocky moor called Barstobrick a spot is pointed out where Mary of Scotland is alleged to have rested to refresh herself in her flight from the battle of Langside to the abbey of DUNDRENNAN. The event has bequeathed to the farm the name of Queenshill. On Kirkconnell Moor, at a great distance from any house, a plain granite monument was erected in 1831 over the grave of the martyr James Clement, who, with four other Covenanters, was shot here by Grierison of Lag in Feb. 1685. There are sites or remains of cairns in four localities, of a fort near the Free Church manse, and of

a stone circle near the Linn of Lairdmannoch. The Premonstratensian abbey of Tongland, near the parish church, was founded by Fergus, Lord of Galloway, about the middle of the 12th century, for canons who came from Cockerland in Lancashire. In 1325 the Gallowegian rebels slew the abbot and sacrist in the church, because they were foreigners and had sworn allegiance to Edward I. of England. The last abbot, Damian, satirised by Dunbar, was an Italian alchemist, who in the presence of James IV. essayed to fly from Stirling Castle to France. He fell into a midden, and fractured his thigh bone—a fiasco ascribed by him to the blending in his pinions of a dunghill cock's plumes with eagle's feathers. Little remains of the abbey save the northern round-headed arch, excavated and restored in 1851. John Morrison (1782-1853), painter, poet, and land-surveyor, spent most of his life in Tongland, and is buried in the churchyard. ARGRENNAN and QUEENSHILL, noticed separately, are the principal residences. Tongland is in the presbytery of Kirkcudbright and the synod of Galloway; the living is worth £177. The parish church, at the hamlet, is a red granite Gothic edifice of 1813, with 420 sittings and a square pinnacled tower, in which hangs a bell bearing date 1633. In 1889 a new mission and public hall was erected; and in 1890 a mutual improvement association, with reading and recreation rooms, was established. A Free church stands close to Tarf station; and Tongland public school, with accommodation for 86 children, had (1893) an average attendance of 87, and a grant of £73, 13s. 6d. Pop. (1801) 636, (1831) 800, (1861) 892, (1871) 908, (1881) 829, (1891) 845.—*Ord. Sur.*, sh. 5, 1857.

Tongue (Norse, *tunga*, 'a tongue of land'), a village and a coast parish in the N of Sutherland. The village of Tongue or Kiriboll stands on the E side of the Kyle of Tongue, 44 miles WSW of Thurso, and 38½ N of Lairg station, with the latter of which it communicates thrice a week by mail coach, and with the former daily. It has a post office, with money order, savings bank, and telegraph departments, a literary institute, a subscription library, a good hotel, a police station, and sheriff small debt courts in May, July, and October.

The parish, till 1724 forming one with Durness and Eddrachillis as part of 'Lord Reay's country,' is bounded N by the North Sea, E and S by Farr, and W by Durness. Its utmost length, from N to S, is 17½ miles; its utmost width, from E to W, is 11½ miles; and its area is 136½ square miles or 87,329½ acres, of which 3967½ are water, 2283½ foreshore, and 41½ tidal water. Loch DERRY or Loch an Dithreihb (1½ mile × 5 furl.; 268 feet) sends off the Amhainn Ceann Lochs 3½ miles north-by-eastward to the head of the KYLE of TONGUE, a sea-loch 3½ miles long and 2½ broad at the entrance. Loch LOYAL or Laoghal (4½ miles × 7 furl.; 369 feet), on the Farr boundary, sends off the river BORGIE 10½ miles north-north-eastward, through Lochs CRAGGIE or Creagach (1½ mile × 3½ furl.) and Slaim (3 × 2 furl.), to Torrisdale Bay (1 × ½ mile). Loch na Meide (3½ miles × 5½ furl.; 490 feet), in the extreme S, belongs mainly to Tongue, but partly to Durness and Farr, and sends off the MUDALE into the latter parish to Loch Naver. Of nearly a hundred other fresh-water lakes or lakelets, the chief are Loch Cuil na Sith* (7½ × 1 furl.; 398 feet), sending off a stream 1½ mile east-north-eastward to the head of Loch Loyal; and star-shaped Loch Halm or Chaluim (5½ × 4½ furl.; 690 feet), sending off one 1½ mile north-westward to the head of Loch Derry. Both streams and lochs afford splendid fishing. Measured along all its ins and outs, the coast, from the entrance of Tongue Bay, extends 7½ miles west-north-westward to within 1 mile of Loch Eriboll, and 5½ miles eastward and south-eastward to the middle of Torrisdale Bay. It is nearly everywhere rocky and precipitous, rising rapidly to a height of 935 feet above the sea at WHITEN HEAD, 314 at Lamigo Bay, and 300 at Ard Torrisdale. ELLAN-NA-COOMB (231 feet

high) and ELLAN-NAN-RON (247), to the NE of the entrance to Tongue Bay, and the RABBIT ISLANDS (100), within the bay, are all three noticed separately. (See also PORTSKERRA.) The interior is everywhere hilly and often grandly mountainous, chief elevations from N to S being Meall Leathad na Craoibhe (1013 feet), Beinn Tomaine (1728), and BEN LOYAL (2504), to the E of Loch Derry and the Kyle of Tongue; and, to the W, BEN HUTIG (1340), Meallan Liath (1962), and the south-eastern shoulder (2364) of BEN HOPPE, whose summit (3040) is in Durness parish. Gneiss, capped with conglomerate, on some of the hills, is the predominant rock; syenite forms the main mass of Ben Loyal; mica slate has been quarried on the western border for slates and flags; and moss, partly abounding in bog iron, partly of a kind well suited for fuel, covers an extensive area. The soil of the arable lands is partly a light or a rich black loam, but chiefly a compound of moss, gravel, sand, and clay. Over 150 acres have been reclaimed at Ribigill, steam-power being employed in part of the work; but only about 1100 acres are in tillage, whilst 700 or so are under natural and planted wood. The rest of the parish is largely disposed in sheepwalks, the vast sheep-farm of Ribigill extending to 30,000 acres, and that of Melness (which is partly in Tongue and partly in DURNESS) to 70,000 acres. The House of Tongue stands 1½ mile N of the village, at the commencement of the Tongue peninsula, its garden washed by the waves of the Kyle, and its grounds overshadowed by noble old trees. An aggregation of successive structures, the work of many generations, a grotesque collection of masonry formed and run together in defiance of all architectural rule or taste, it is now the residence of the Duke of Sutherland's factor, but it has all the associations of having been the principal seat of Lord Reay, the chief of the clan Mackay, from whom a large section of Sutherland took the name of 'Lord Reay's country.' The wizard, Sir Donald Mackay of Farr, who became first Lord Reay in 1628, figured in both the Thirty Years' War and the Great Rebellion. His fifth descendant, Eric, seventh Lord Reay (1773-1847), sold the Reay estates to the Sutherland family in 1829; and at the death of the ninth Lord Reay in 1875, the title passed to Æneas Mackay (1806-76), eldest male descendant of the second Lord Reay, and a baron of the kingdom of the Netherlands. His son and successor, Donald James Mackay (b. 1839), was raised to the peerage of the United Kingdom in 1881 as Baron Reay of Durness, and was Governor of Bombay from 1885 to 1890. (See CAROLSIDE.) The most striking antiquity is Castle-Varrich or Caisteal Bharich, surmounting a promontory to which it gives name, and originally a strong square building of two storeys, the first arched with stone, the second covered with wood. It still forms a large square shell, figuring finely in the landscape, but unknown to either history or tradition. Remains of several circular towers occur, so situated within view of one another, from the coast to the interior, that they may be supposed to have been raised as beacon-towers. Other antiquities are tumuli, cup-marked stones, and subterranean retreats. The Duke of Sutherland is sole proprietor. Tongue is the seat of a presbytery in the synod of Sutherland and Caithness; the living is worth £182. The parish church, built in 1680, and almost rebuilt in 1731, was repaired in 1862, and contains 120 sittings. There is also a Free church, and a chapel of ease and a Free church at Melness; and three public schools—Melness, Skerray, and Tongue—with respective accommodation for 205, 110, and 110 children, had (1893) an average attendance of 107, 72, and 62, and grants of £117, 4s., £85, 14s. 6d., and £100, 1s. Pop. (1801) 1348, (1831) 2030, (1861) 2077, (1871) 2051, (1881) 1929, (1891) 1925, of whom 1639 were Gaelic-speaking.—*Ord. Sur.*, shs. 114, 108, 1880.

The presbytery of Tongue comprises the *quoad civilia* parishes of Durness, Eddrachillis, Farr, and Tongue, and the *quoad sacra* parishes of Kinlochervie and Strathay. Pop. (1881) 6371, (1891) 7044, of whom 65 were communicants of the Church of Scotland in 1894.

* The anglicising of the Gaelic *Cuil na Sith* ('corner of peace') into *Coolside*, in the *Imperial Gazetteer of Scotland*, is a curious instance of phonetic corruption.

TONLEY HOUSE

The Free church also has a presbytery of Tongue, with churches at Altnaharra, Durness, Eddrachillis, Farr, Kinlochberrie, Melness, Strath, and Tongue, which eight churches together had 3771 members and adherents in 1894.

Tonley House. See TOUGH.

Tor-Alvie. See ALVIE.

Tore, a post office in Killearnan parish, Ross and Cromarty, 4 miles W by S of Munloch.

Torgyle. See GLENMORISTON.

Torium. See DRUMMOND CASTLE.

Tornaveen, an estate, with a mansion, in Kincardine O'Neil parish, Aberdeenshire, 3 miles N by W of Torphins station.

Torosay, or Pennygown and Torosay, a parish in Mull Island, Argyllshire, containing the hamlet of Lochdonhead, 8½ miles W of Oban. It has a post office (Auchnacraig), with money order, savings bank, and telegraph departments. Communication is held with the mainland by steamers passing through the Sound of Mull. The parish is bounded NE by the Sound of Mull, E, SE, and S by the Firth of Lorn, W by Kilfinichen and Loch-na-Keal, and NW and N by Kilninian. Its utmost length, from E to W, is 12½ miles in direct line, but 18½ by the shortest road; and its utmost breadth, from N to S, is 10 miles. Until 1891 it had a detached part situated at Burg, on the north side of the entrance to Loch Scridain, and comprising 1307 acres. This was transferred by the Boundary Commissioners in that year to the parish of Kilfinichen and Kilviceon, and a part of that parish situated on the west shore of Loch Buy was in turn transferred to the parish of Torosay. The coast, on the Sound of Mull and the Firth of Lorn, measures, exclusive of sinuosities, about 22 miles; has headlands of various shapes—some rounded, some acutely angular; and is indented with the sea lochs of Don, Spelvie, and Buy, and the bays of Duart, Craignure, Macalister, Cornahenach, Fishnish, and Pennygown. The interior is mainly mountainous, yet contains the three vales of GLENMORE, Glen FORSA, and Glen CAINAIL, and comprises a considerable aggregate of low-lying land. A chain of peaked mountains extends along its centre from end to end, has mostly a common base, and attains a maximum altitude of 3185 feet in BENMORE. Several minor chains strike laterally from the main one, rise from common bases, and run nearly parallel to one another; and Ben Buy (2352 feet), a splendid mountain, stands by itself at the head of Loch Buy. A series of small lakes lies in Glenmore, and several others are scattered over the rest of the parish. One considerable rivulet issues from the Glenmore lakes, another issues from Loch Ba, and another traverses Glenforsa. The predominant rocks are trap, sandstone, and a coarse limestone; and the most noted minerals are rock-crystals, calc-spar, and fluor-spar. The soil of the arable lands is chiefly gravelly or mossy, and partly sandy, loamy, or clayey. Less than one-thirtieth of the entire area is in tillage, but about one-twentieth more is capable of reclamation. The chief mansions are Duart House, Glenforsa House, and Lochbuy House. A principal antiquity is DUART CASTLE; and other antiquities are a tower at the head of Loch Buy, and ruins of three pre-Reformation chapels. Giving off all KINLOCHSPELVIE and part of SALEN *quoad sacra* parish, Torosay is in the presbytery of Mull and the synod of Argyll; the living is worth £185. The parish church was built in 1783, and contains 280 sittings. There is a Free church of Torosay; and three public schools—Crogan, Kinlochspelve, and Lochdonhead—with respective accommodation for 27, 46, and 87 children, had (1893) an average attendance of 11, 28, and 21, and grants of £26, 5s. 6d., £46, 18s., and £38, 11s. 6d. Pop. (1801) 1764, (1831) 1889, (1861) 1380, (1871) 1254, (1881) 1102, (1891) 987, of whom 790 were Gaelic-speaking, and 358 were in Torosay ecclesiastical parish.

Torphichen (Gael. *torr-fithichean*, 'the raven's hill'), a village and a parish of W Linlithgowshire. The village stands 1½ mile ENE of Westfield station, 4½

TORPHICHEN

miles SSW of Linlithgow, and 2½ N by W of Bathgate, under which it has a post office. A place of great antiquity, and once of much importance, it has now an entirely rural character, and presents a straggling but pleasant appearance. Pop. (1841) 397, (1861) 477, (1871) 406, (1881) 353, (1891) 317.

The parish, containing also BLACKRIDGE village, 6½ miles to the SW, is bounded on the N and E by Linlithgow, on the SE by Bathgate, at its SW extremity by Shotts and New Monkland in Lanarkshire, and on the NW by Slamannan and Muiravonside in Stirlingshire. Its utmost length, from ENE to WSW, is 9½ miles; its breadth varies between ½ mile and 2½ miles; and its area is 15½ square miles or 9956½ acres, of which 17½ are water. The river Avon or AVEN winds 3½ miles east-north-eastward along all the Muiravonside boundary; and its affluent, Polness or Drumtassie Burn, runs 4½ miles north-eastward along nearly all the Slamannan boundary. BARBAUCHLAW Burn, coming in from Lanarkshire, runs 7½ miles north-eastward along the Shotts and Bathgate boundary, until it unites with Couston or BALLENCRIEFF Water to form Logie Water, which, flowing 6½ furlongs north-north-westward across the narrowest part of the parish, falls into the Avon near Crawhill, and divides the parish into two unequal portions, the smaller to the E, the larger to the SW. Ballencrieff Water, just before its junction with the Barbauchlaw Burn, traces about one-half of the remaining boundary with Bathgate parish, the other half being artificial. Along the Avon the surface declines to 300 feet above sea-level, and thence it rises eastward to 777 at the Torphichen Hills, 749 at Bowden Hill, 912 at COCKLEUE, and 1016 at Cairn-naple or Cairnpapple; south-westward to 648 feet near Wester Righead, 705 near Canties, 824 at Eastcraigs Hill, and 759 near Bedlormie. Torphichen thus sends up the highest points in West Lothian, and, compared with the general aspect of that fine champaign county, is markedly tumulated, and boldly hilly at the NE end. The south-western district is naturally moorish; but, making abatements for cold wet moor towards the W, and some little extent of hill-pasture on the E, the parish is generally fertile, and has an enclosed, warm, wealthy appearance. A judicious distribution of planted trees has materially served both to shelter and to beautify. The summits of the hills command a most magnificent prospect of the Lothians and Fife, of the Ochils and the frontier Grampians, and generally of the basin of the Forth, from the sources of the river at Ben Lomond to the mouth of the Firth at North Berwick Law. The rocks are partly eruptive, partly carboniferous, and they exhibit in the eastern group of hills a very interesting series of superpositions. Trap, limestone, and sandstone are quarried; coal is mined; ironstone also occurs; and silver ore exists, but in so small a quantity that an attempt to work it was soon abandoned. The soil is very various, and ranges from fertile alluvium to barren moor. Adjacent to the village on the NE are some remains of the hospital or preceptory of Torphichen, from 1153 the principal Scottish residence of the Knights of St John of Jerusalem. Of the cruciform church of the preceptory, the chancel and the nave are entirely gone, and there only is left a portion of the transept or 'quier,' which, measuring internally 66 feet by 20, is Early Second Pointed in style. The nave appears to have been 112 feet long; but its site is now occupied by an edifice of very different character from it—the plain modern parish church. The traceried window of the southern transept makes some pretensions to beauty, and the four piers supporting the central tower display some architectural grace; but the other parts which remain of the edifice do not prove it to have been conspicuous either for size or for beauty. The belfry or steeple is ascended by a narrow spiral stair, and has comparative meanness of altitude and aspect. Within the choir are the baptismal font, a curious recess where corpses were laid during the celebration of the burial mass, and the monument (1538) of Sir Walter Lindsay, the last preceptor but one. Fragments of massive old

TORPHINS

buildings in the village, and the stones in the fences over the face of the adjacent country, indicate how great and magnificent a seat of population once surrounded the church. A stone, resembling a common milestone, but with a cross carved on its top, stands in the churchyard, near the W end of the present church, and is thought to mark the centre of a privileged sanctuary-ground attached to the preceptory. Similar stones marked the limits or corners of that ground, each 1 mile distant from the centre; and all the space within the circle drawn round these outlying stones was as much a legal sanctuary as the church at its centre, and afforded protection against the law to every criminal or debtor who entered and remained within its precincts. The knights were introduced to this establishment by David I., and had many possessions conferred on them by him and his successors; and after the suppression of the Knights Templars in 1312, they inherited the extensive property of that great rival Order. In 1291 and 1296, Alexander de Wells, 'prior hospitalis Sancti Johannis Hierusalemiani in Scotia,' swore fealty to Edward I.; and in 1298 he was slain in the battle of Falkirk. From precepts which Edward issued to the sheriffs to restore the property of the Knights, the preceptory of the Order seems, even at that early period, to have had estates in almost every county except Argyll, Bute, and Orkney. Radulph de Lindsay was preceptor under Robert I. Sir Henry Livingston was preceptor under James II., and died in 1463. Sir Henry Knolls, the next preceptor, governed the Order in Scotland during half a century, and was commonly called Lord St John. Treasurer to James III. from 1468 to 1470, he joined the party who hunted down that monarch to his unhappy end; in 1489-90 he was appointed to collect the royal revenues in Linlithgowshire; and after being much employed by James IV., he fell fighting by his side on the Field of Flodden. Sir George Dundas, his successor in the preceptorship, was the school-fellow of Hector Boece, and is praised for his learning. Sir Walter Lindsay, the next preceptor, was a 'valiant capitane by sea and land,' and rose to be Justice-General of Scotland. Sir James Sandilands, the last on the list, joined the Reformers in 1560; and on his paying down 10,000 crowns and engaging to pay an annual rent of 500 merks, he received the remaining estates of the Order as a temporal barony, and was raised to the peerage under the title of Lord Torphichen. (See CALDER HOUSE.) The civil antiquities, besides those noticed under BEDLORMIE, BRIDGE CASTLE, and OGILFACE, are the old peel-like mansion of Kippis, fine sites or remains of four hill-forts or camps, and remains of a stone circle in a field adjoining the mansion of Kippis. The parish is traversed by the middle road from Edinburgh to Glasgow, by the road from Bathgate to Falkirk, and by 7½ furlongs of the Blackstone and Bathgate branch of the North British railway. Henry Bell (1767-1830), who introduced steam navigation into Europe, was a native. (See HELENSBURGH.) Mansions, noticed separately, are BRIDGE CASTLE, CATSLAW, LOCHCOOTE, and WALLHOUSE. Giving off a portion to Armadale *quoad* sacra parish, Torphichen is in the presbytery of Linlithgow and the synod of Lothian and Tweeddale; the living is worth £200. The parish church, built in 1756, contains about 360 sittings. The Free church is one of the earliest in Scotland; and at Blackridge there is a Free Church preaching station. Three public schools—Blackridge, Torphichen, and Woodend—with respective accommodation for 80, 140, and 128 children, had (1898) an average attendance of 65, 142, and 89, and grants of £87, 7s., £147, 0s. 6d., and £86, 15s. 6d. Pop. (1881) 1526, (1891) 1724.—*Ord. Sur.*, sh. 31, 1867.

Torphins, a *quoad sacra* parish of Aberdeenshire, in the *quoad civilia* parish of Kincardine O'Neil, with a station on the Deeside railway 24 miles W by S of Aberdeen, and a post office, with money order, savings bank, and telegraph departments. Constituted in 1875, it is in the presbytery of Kincardine O'Neil and the synod of Aberdeen; the minister's stipend is £120. Pop. (1881) 830, (1891) 824.—*Ord. Sur.*, sh. 76, 1874.

TORRYBURN

Torrance, a village in Campsie parish, Stirlingshire, on the right bank of the Kelvin, 3 miles W of Kirkintilloch. It has a post office under Glasgow, a station on the Kelvin Valley section of the North British railway, a Free Church preaching station, a Roman Catholic church, and a public school (1882). Pop. with Wester Balgrochan (1871) 671, (1881) 624, (1891) 466.—*Ord. Sur.*, sh. 31, 1867.

Torrance, an ancient parish of W Lanarkshire, annexed to East KILBRIDE in 1589. Torrance House, near the left bank of the Rotten Calder, 2 miles SE of East Kilbride village, in its oldest part dates from the 14th century, but has been added to at different times. Its owner is Robert Edward Stuart Harington-Stuart, Esq. (b. 1834; suc. 1879). The Tor, ¼ mile to the W, is an artificial mound, 160 yards round the base, and 20 of ascent.—*Ord. Sur.*, sh. 23, 1865.

Torridon, Loch, a large sea-loch of Applecross parish, W Ross and Cromarty, striking 7½ miles south-eastward to the entrance of Loch SHIELDAIG, and then 6 miles eastward to the foot of Glen Torridon. It measures 4½ miles across the entrance, contracts near Shildaig to 3 furlongs, and afterwards, in Upper Loch Torridon, attains a maximum width of 1¼ mile. Of the bold steep mountains surrounding it, the loftiest are Liathach (3456 feet), 2½ miles NE of the head of the Upper Loch, and Beinn Alligin (3232), 2½ miles from its northern shore. The Queen drove over from Loch Maree on 15 Sept. 1877, and Upper Loch Torridon she describes as 'almost landlocked and very pretty. . . . To the W are the hills of Skye, rising above the lower purple ones which close in the loch. To the S are Applecross and the high mountain of Beinn Damh (2958 feet), with, in the distance north-eastward, the white peaks of Liathach. . . . An old man, very tottery, passed where I was sketching, and I asked the Duchess of Roxburgh to speak to him; he seemed strange, said he had come from America and was going to England, and thought Torridon very ugly!' (*More Leaves*, 1884). At the head of the Loch, 10 miles WSW of Kinlochewe, is the tiny hamlet of Torridon, where are a small inn, a post office, with money order and savings bank departments, and a public school. Torridon House, 2 miles WNW, on the northern shore of the Upper Loch, is a fine mansion, built by Duncan Darroch, Esq. of GOUROCK, who purchased the estate in 1872 for £63,000. It had been sold in 1767 for £1727 (*i.e.*, for little more than 1s. an acre), and in 1836 for £12,150; and its increased value was due to the change from sheep to deer.—*Ord. Sur.*, shs. 81, 91, 92, 1881-82.

Torrie House. See TORRYBURN.

Torrisdale Castle, a mansion in Saddell and Skipness parish, Argyllshire, near the E shore of Kintyre, and 1¼ mile SSW of Carradale.

Torry, a fishing village in Nigg parish, Kincardineshire, on the right bank and near the mouth of the Dee, which is here spanned by Victoria Bridge, a handsome granite structure opened in 1881—a ferry-boat accident in April 1877 having cost the lives of 32 out of 60 passengers. The bridge connects Torry with Aberdeen, and by the City of Aberdeen Act of 1891 the village is included within the boundaries of that town. (See NIGG.) It has a post office, with money order and savings bank departments, a small harbour and pier, a Free church, a public school, extensive brick and tile works, and a preserved provision manufactory.—*Ord. Sur.*, sh. 77, 1873.

Torryburn, a village and a parish of SW Fife. The village, lying on the shore of the Firth of Forth, 1¼ mile S of Oakley station, 2½ miles E of Culross, and 4½ WSW of Dunfermline, is a seaport carrying on a small amount of commerce, and was at one time the port of Dunfermline. It has a post office under Dunfermline, with money order and savings bank departments, a pier (at Crombie Point), and a fair on the second Wednesday of July. Pop. (1871) 723, (1881) 427, (1891) 607, of whom 354 were in Low Torry.

The parish, comprising the greater part of the ancient parish of CROMBIE, had prior to 1891 a detached part

situated near the lands of Cults, adjoining the parish of Saline, and comprising 1734 acres; and the parish of Saline had a detached part situated at Inzievar, adjoining the parish of Torryburn, and comprising 1154 acres. The Boundary Commissioners caused the two parishes to exchange their detached parts. Torryburn is bounded W and NW by Culross, NE and E by Carnock and Dunfermline, and S and SW by the Firth of Forth. Its utmost length, from NW to SE, is $4\frac{1}{2}$ miles; its utmost breadth is 2 miles; and its area is 4415 acres, of which 3 are water and $998\frac{1}{2}$ foreshore. The coast is mostly low and flat, and the highest point is Shaw Hill (250 feet). Coal, ironstone, and sandstone have all been largely worked, and a fine brown clay suitable for making bricks and tiles is plentiful. The soil of the arable lands is good and highly cultivated. The Alloa and Dunfermline section of the North British railway crosses the extreme north of the parish, and the only station is that of Oakley. Antiquities are the ruins of Crombie church and a large stone at Tollzie, supposed to commemorate an ancient battle. Torrie house, a little way N of the village, belongs to R. G. Erskine-Wemyss, Esq. of WEMYSS Castle. Dunimarle estate possesses beautiful grounds and a museum, both of which are open to the public. Torryburn is in the presbytery of Dunfermline and the synod of Fife; the living is worth £177. The parish church, at Torryburn village, was built in 1800, and contains about 500 sittings. There is also a Free church; and a public school, with accommodation for 170 children, had (1893) an average attendance of 146, and a grant of £151, 4s. 6d. Valuation (1885) £7145, 10s. 10d., (1893) £7206, 9s. 3d. Pop. (1801) 1403, (1831) 1436, (1861) 1229, (1871) 1051, (1881) 737, (1891) 1032, of whom 827 were in Torryburn ecclesiastical parish.—*Ord. Sur.*, shs. 40, 39, 1867-69.

Torsay, one of the Slate Islands in Kilbrandon and Kilchattan parish, Argyllshire. It is separated by only narrow straits from Seil on the N, the mainland on the W, and Luig on the E. The strait between it and Luig offers a communication across, from ebb till half-tide, by a rocky bar not 100 yards in breadth; and is rendered so intricate and whirling by rocks and rocky islets, that the tide sweeps it with great rapidity, and in a perfect dance of complicated movement. The island is an irregular ellipsoid, the longer axis extending NE and SW; and it measures 3 miles by 1, having an area of 275 acres. Its surface exhibits one smooth green hill, 200 feet high, and a ridge of still lower elevation on the W, both descending in gentle slopes to the sea. The whole of its E side, excepting a few trap rocks, and a little greywacke, consists of the same clay-slate as that for which Luig and Seil are celebrated. Pop. (1871) 20, (1881) 10, (1891) 7.

Torsone House, an ancient but renovated mansion in Stow parish, Edinburghshire, near the left bank of Gala Water, 7 furlongs S by W of Stow village.

Torthorwald, a village and a parish of SW Dumfriesshire. The village stands on the face of a long broad brae, $8\frac{1}{2}$ miles N of Racks station on the Dumfries and Annan section of the Glasgow and South-Western railway, and 4 ENE of Dumfries, under which it has a post office.

The parish, containing also the villages of RACKS and COLLIN, is bounded NW and N by Tinwald, E by Lochmaben, SE by Mouswald, SW by Caerlaverock, and W by Dumfries. Its utmost length, from N to S, is $6\frac{1}{2}$ miles; its utmost breadth is $3\frac{3}{8}$ miles; and its area is 6843 $\frac{1}{2}$ acres, of which 12 are water. Sluggish LOCHAR Water flows $6\frac{1}{2}$ miles south-by-eastward along all the boundary with Dumfries and Caerlaverock; and ditch-like Wath Burn traces all the Mouswald boundary, until, at the southern extremity of the parish, it falls into Lochar Water. All the parish to the S of Collin village, with a strip about $\frac{1}{2}$ mile broad along all the upper part of the western border, is part of Lochar Moss; and at no part exceeds 57 feet above sea-level. The rest of the surface is mainly the western face or westward brae of the middle portion of the broad-based range

of hill commencing in the N of Tinwald and extending southward to the S of Mouswald. This brae extends across a base of from 2 to $2\frac{1}{2}$ miles, to a maximum altitude in Torthorwald of 803 feet close to the Lochmaben boundary. It is finely diversified with hillock, terrace, and waving hollow; presents, as seen from Dumfries, and from any other part of the Nith's banks, a very beautiful section of the eastern hill-screen of Lower Nithsdale; and from its highest points commands a very brilliant view of the southern half of Dumfriesshire, the eastern part of Galloway, the Solway Firth, and part of Cumberland and the Irish Sea. Much of the moss district has been reclaimed; and all the brae, excepting a small extent of pasture, is in tillage. The predominant rocks are Silurian, and cannot be quarried. The soil, on a bank contiguous to the E side of the moss, is sandy; on the lower and middle parts of the brae is rich and fertile; and on the higher grounds is cold and moorish. Torthorwald Tower, in the southern vicinity of Torthorwald village, is a curious ruin, with very thick walls, whose mortar is as hard as stone. It is of unknown origin, but is supposed to have existed since the 13th century, and was inhabited by the Carlyles and Kirkpatrick, as well as by a natural son of the Regent Morton, who about 1590 was created Lord Torthorwald by James VI. Vestiges of two ancient Caledonian camps are on the brow of the brae, and show two or three concentric trenches. The Marquess of Queensberry's estate in both Torthorwald and Tinwald was purchased in 1884 by James Jardine, Esq. of Dryfeholm; and Sir Alexander Davidson Grierson of Lag, Bart., is another large proprietor. Torthorwald is in the presbytery and synod of Dumfries; the living is worth £316. The parish church was built, partly in 1730, chiefly in 1782, and was enlarged in 1791 and 1809. Restored and reseated in 1877, it contains 500 sittings. Two public schools, Collin and Torthorwald, with respective accommodation for 136 and 100 children, had (1893) an average attendance of 110 and 42, and grants of £125, 18s. 6d. and £33. Pop. (1801) 703, (1841) 1346, (1861) 1254, (1871) 1093, (1881) 990, (1891) 921.—*Ord. Sur.*, sh. 10, 1864.

Torwood, a village in Dunipace parish, Stirlingshire, $2\frac{1}{2}$ miles NNW of Larbert station. To the S are the ruins of Torwood Castle, supposed to have been built by one of the Baillies about the middle of the 16th century, and surrounded by the Tor Wood, a remnant of the ancient Caledonian Forest, and a hiding-place of Sir William Wallace. The true 'Wallace Oak' here is gone for ever, though a shoot of it was thriving so late as 1835. The so-called 'Wallace Oak' in the Carbrook policies cannot be more than 300 years old; but an old thorn near it was very possibly the identical tree beneath which Donald Cargill excommunicated Charles II., Sept. 1680 (*Trans. Highl. and Ag. Soc.*, 1881, p. 204).—*Ord. Sur.*, sh. 31, 1867.

Torwoodlee, a handsome and commodious mansion of 1784, in the Selkirkshire portion of Stow parish, near the right bank of Gala Water, 2 miles NW of Galashiels. To the W are the ruins of its predecessor, a large and well-built tower. Held by his ancestors since 1509, Torwoodlee now belongs to James Thomas Pringle, Esq. (b. 1832; suc. 1859).—*Ord. Sur.*, sh. 25, 1865.

Toskerton. See STONEKIRK.

Touchadam. See POLMAISE CASTLE.

Touch House, a mansion in St Ninians parish, Stirlingshire, near the right bank of Touch Burn, 3 miles W by S of Stirling. Having come to his grandmother in 1835, the estate now belongs to Sir Alan Henry Seton-Steuart of ALLANTON, fourth Bart. since 1815 (b. 1856; suc. 1884), who is hereditary armour-bearer and squire of the royal body in Scotland.—*Ord. Sur.*, sh. 39, 1869.

Tough, a parish in Alford district, Aberdeenshire, containing Whitehouse station, $2\frac{1}{2}$ miles ESE of Alford terminus, and $26\frac{1}{2}$ WNW of Aberdeen. It is bounded N by Keig, E by Monymusk, SE by Cluny and by Kincardine O'Neil, S by Lumphannan, W by Leochel-Cushnie, and NW by Alford. Its utmost length, from NNE to SSW, is $6\frac{1}{2}$ miles; its utmost breadth is $3\frac{3}{8}$ miles; and

its area is 7112½ acres, of which 4 are water. The drainage is carried northward towards the Don; and at Whitehouse station the surface declines to 450 feet above sea-level, thence rising to 1306 feet at Green Hill on the Monymusk boundary, and 1821 at CORRENNIE or Benacquahall on the Kincardine O'Neil boundary. Red and blue granites and gneiss are the predominant rocks; and hard claystone porphyry and magnesian limestone also occur. The soil, in most places light, in several shallow and stony, is here and there mixed with moss, but very deep and fertile. Less than one-half of the entire area is in tillage; some 1100 acres are under wood; and the rest of the land is either pastoral or waste. Antiquities are two or three cairns, several stone circles, an assemblage of standing-stones and small tumuli, and a standing-stone 12½ feet high and 9½ in circumference, traditionally alleged to mark the grave of Lulach or Luath, the son of Lady Macbeth. The plain farmhouse of Tillyfour, 3½ miles SSW of Whitehouse station, was the home of the 'king of graziers,' William M'Combie, Esq. (1805-80), whose matchless herd of polled Angus or Aberdeen cattle procured him the honour of a visit from the Queen in 1866, and who sat for West Aberdeenshire in the Liberal interest from 1868 till 1876, being the first tenant-farmer returned in Scotland. In 1883 the Tillyfour estate, of 1900 acres (1195 arable, 400 hill-pasture, and 305 wood), was sold for £23,000 to Henry Begg, Esq., of Lochnagar Distillery. Tonley House, a large old mansion, ½ mile NNW of the church, is the seat of George Moir-Byres, Esq. (b. 1839; suc. 1891). Two more mansions are Whitehouse, standing high, to the SE of the station; and Tullochvenus, in the extreme S, 3 miles N of Lumphannan station. Tough is in the presbytery of Alford and the synod of Aberdeen; the living is worth £166. The parish church, 1½ mile S by W of Whitehouse station, was built in 1838, and contains 550 sittings. A public school, opened in 1884, with accommodation for 150 children, had (1893) an average attendance of 98, and a grant of £91, 0s. 6d. Pop. (1801) 629, (1831) 828, (1861) 874, (1871) 760, (1881) 681, (1891) 675.—*Ord. Sur.*, sh. 76, 1874.

Tour, a mansion in Kilmaurs parish, Ayrshire, 2 miles NNW of Kilmarnock. It was bought by Mr Pollock, banker, Barrhead, in 1894.

Toward Point, a headland in Dunoon parish, Argyllshire, 6½ miles SSW of Dunoon town, 3½ W by S of Wemyss Bay, and 8½ NE of Rothesay. Its lighthouse, standing 70 feet above high-water, was completed in 1812, and shows a white light flashing every 10 seconds. A fog-bell sounds three times in quick succession every 15 seconds. Near it is a steamboat pier, affording access to Toward village, which has a chapel of ease to Dunoon and a public school. There is a post and telegraph office at Toward Point, and another with money order and savings bank departments at the village. (See CASTLE-TOWARD AND DUNOON.)—*Ord. Sur.*, sh. 29, 1873.

Towerhill House, a mansion in Kilmaurs parish, Ayrshire, 2½ miles NW of Kilmarnock.

Tower-Lindsay. See CRAWFORD.

Towie, a parish of Aberdeenshire, whose church stands on the right bank of the Don, 10 miles SSW of Rhynie, and 12½ WSW of Alford (only 8½ as the crow flies). On the opposite side of the river are Inverkindie post office and the Glenkindie Arms Inn (1821), where fairs are held on 27 May and on Saturdays after Banchory in September and November. The parish is bounded N and NE by Kildrummy, E by Leochel-Cushnie, S by Tarland and Logie-Coldstone, W by Strathdon and Glenbucket, and NW by Cabrach in Banffshire. Its utmost length, from N to S, is 6½ miles; and its utmost breadth, from E to W, is 6½ miles. The detached Glencuie portion, to the NW, was joined to the main portion of the parish in 1891 by an Order of the Boundary Commissioners, which transferred to Towie the intervening detached Glenkindie portion of the parish of Strathdon. Towie also received at the same time from Tarland parish so much of its detached Deskyr portion as lay on the right bank of the river of that name. The Don winds 6½ miles east-north-eastward, mainly across the

interior, but partly along the Strathdon, Glenbucket, and Kildrummy boundaries; and here is joined by four or five little burns. Along it the surface declines to 600 feet above the sea, and chief elevations on its left or northern side are Glaschuil or Grey Hill (1177 feet), Garlet Hill (1596), and *Peat Hill (1857); on its right or southern side, *Scar Hill (1723), *Broom Hill (1883), and Gallows Hill (1425), where asterisks mark those summits that culminate on the confines of the parish. The hills are undulating, smooth, and heathy; and the arable lands are partly haugh, partly the steep declivities of the hills. The soil near the river is very fertile, and produces comparatively early crops. The parish is fairly well wooded, especially to the N of the Don, but in the S there is hardly a tree. Granite and sandstone are scarce or difficult of access; a coarse hard limestone is found in one or two places; and serpentine occurs on one farm. The ancient name of the parish was *Kilbartha* ('the church or cell of Bartha'); and its later name, written in full, was *Towie-Kinbattoch* ('the north-lying land at the head of the fair hill'). There are sites or remains of several pre-Reformation chapels; artificial mounds, seemingly parts of ancient fortifications, at Kinbattoch and Fiechie; large tumuli at Grayhill, one of which on being opened was found to contain charred bones and an arrow head; and a sculptured stone in the churchyard. But the most conspicuous antiquity is the ruin of the castle of Towie, anciently the fortified seat of a branch of the sept of Forbes. A square tower is almost all that now remains of it. The castle is famous as the scene of a terrible tragedy, enacted in the November of 1571. Alexander Forbes was absent at the time; but his lady, Margaret Campbell, being summoned to surrender by a party of soldiers despatched by Sir Adam Gordon of Auchindoun, fired upon their leader, one Captain Kerr, and wounded him in the knee. In revenge, the castle was straightway fired, when she and her family and domestics, numbering twenty-seven persons, perished in the flames.* Towie is in the presbytery of Alford and the synod of Aberdeen; the living is worth £193. The parish church, built in 1803, is a plain structure; a hall was opened in 1890, and extensive alterations and improvements were made in the church in 1894. There is also a Free church; and a public school, with accommodation for 110 children, had (1893) an average attendance of 71, and a grant of £70, 16s. 6d. Pop. (1801) 528, (1831) 728, (1861) 839, (1871) 798, (1881) 759, (1891) 939.—*Ord. Sur.*, shs. 76, 75, 1874-76.

Towie-Barclay, an old castle in the SE corner of Turfiff parish, Aberdeenshire, near Auchterless station, and 4½ miles SSE of the town of Turfiff. Supposed to have been built in 1593, it remained pretty perfect till 1792, was re-roofed in 1874, and retains a fine baronial hall with vaulted ceiling. From the beginning of the 12th century till 1733, the estate belonged to the Barclays, one of whose line was the celebrated Russian general, Prince Michael Barclay de Tolly (1759-1818). In 1792 it was sold to the governors of Gordon's Hospital, Aberdeen, for £21,000.—*Ord. Sur.*, sh. 86, 1876.

See vol. iv. of *Billings' Baronial Antiquities* (1852).

Townend House, a mansion in Symington parish, Ayrshire, 4 miles E by N of Troon.

Townhead, a place in Crossmachair parish, Kirkcudbrightshire, 2 miles NW of Castle-Douglas, under which it has a post office.

Townhill, a collier village in Dunfermline parish, Fife, 1½ mile NNE of the town. It has a post, money order, and telegraph office under Dunfermline, a public school (1876), and a chapel of ease (1878). Pop. (1871) 855, (1881) 1862, (1891) 1801.—*Ord. Sur.*, sh. 40, 1867.

Town-Yetholm. See YETHOLM.

Trailtrow. See CUMMERTREES.

* An erroneous date (1751) has been given for this event in the *New Statistical Account*. It is also curious that a wholly identical tragedy is narrated of CORGARFF Castle, in Strathdon parish, Aberdeenshire (under the different dates of 1551, 1571, and 1581); of the 'House o' Rodes,' near Gordon village, in Berwickshire; and of Loudoun Castle, in Ayrshire. The fine ballad, *Edom o' Gordon*, has often been published as a 'Border ballad.' Its Ayrshire version is given in the *New Statistical*, vol. v., pp. 846, 847.

Tranent, a town and a parish of W Haddingtonshire. The town is $\frac{1}{4}$ mile SE of Prestonpans station, $7\frac{1}{2}$ miles W by S of Haddington, $3\frac{1}{4}$ E of Musselburgh, $6\frac{1}{2}$ NE of Dalkeith, and $9\frac{1}{2}$ E of Edinburgh. It stands, 200 to 312 feet above sea-level, on a ridge of rising-ground; and its ancient name, *Traverant*, means 'the hamlet in the vale'—from the Cymric *trêf*, 'a homestead or village,' and *nant*, 'a valley.' Its main street extends from E to W along the public road, and is fully $\frac{1}{2}$ mile long. The buildings along this street consist partly of villas and partly of shops, and have a neat and elegant appearance. Built, it is said, by the Picts about the middle of the 11th century, and demolished in 1797, the old parish church is now represented by only a small ruin, which the late Mr Cadell converted into a mausoleum. This church about 1145 was confirmed by Thorald, the son of Swan, to the canons of Holyrood-house. The present plain building, with a square tower, was opened in 1801, and contains 912 sittings. The churchyard commands a view of the Firth of Forth unsurpassed for beauty and variety. Other places of worship are a Free church (1843), a U.P. church (1826; 637 sittings), a Primitive Methodist chapel, and a Roman Catholic church, St Martin of Tours (1892; 300 sittings). The town-hall, built in 1888, cost £1000. The great ornament of the town, however, is its public school, which cost £6500, and was opened on 8 March 1877. It is a stone Elizabethan edifice, with clock-tower and spire, and was designed by Mr Starforth of Glasgow. Stiell's Institution, 5 furlongs N of the town, was built in 1821-22 at a cost of £3000, from a plan by Mr Burn. Till 1884 it provided a free education to some 150 children, having been endowed by George Stiell, a smith and builder in Edinburgh, and a native of Tranent; but the funds are now expended in bursaries and scholarships for the district, in making special provision for secondary education in connection with the public school, and in the boarding and clothing of a few poor children. The town has besides a post office, with money order, savings bank, and telegraph departments, a gaswork, 2 inns, a volunteer corps, a branch of the Royal Bank (1874), ornithological and horticultural societies, etc. Waterworks, costing £7000, and capable of supplying 300,000 gallons per diem, were opened on 10 May 1883. The water is drawn from Crichton springs, about 8 miles off. There is a small iron-foundry and agricultural implement works; but the inhabitants are principally tradesmen, coal-miners, and day-labourers. Queen Mary was once in Tranent, as noticed under SETON; and Colonel Gardiner was borne to the manse from the field of PRESTONPANS. He was buried at the W end of the old church, but no tombstone now marks his grave, which is included within the present church. In the 'No Militia' riot of August 1797 eleven persons or more were killed and twelve wounded. Under the Burgh Police Act of 1892, Tranent is governed by a provost, 2 bailies, and 6 commissioners. Pop. (1851) 2096, (1861) 2257, (1871) 2306, (1881) 2235, (1891) 2389, of whom 1161 were females. Houses (1891) inhabited 508, vacant 22.

The parish, containing also ELPHINSTONE village and the conjoint fishing-village of COCKENZIE and Port-Seton, is bounded N by the Firth of Forth, E by Glads-muir and Pencaitland, S by Ormiston and by Cranston in Midlothian, W by Inveresk in Midlothian, and NW by Prestonpans. Its utmost length, from N to S, is $4\frac{1}{2}$ miles; its breadth varies between $1\frac{1}{2}$ and $3\frac{1}{2}$ miles; and its area is 6176 $\frac{1}{2}$ acres, of which 258 $\frac{1}{2}$ are foreshore. It is traversed in the north by the East Coast section of the North British railway, and in the extreme south by the Macmerry branch of the same system. The coastline, $2\frac{1}{2}$ miles in extent, is all quite flat, except for two greenstone dykes, at Cockenzie and E of Port-Seton, and has a beautiful beach of fine sand. The interior looks, in some views, to be almost level, but really rises southward from the shore, with slow gradient and gentle undulations, attaining 475 feet at FALSDIE Hill and 492 near Elphinstone. The rocks belong to the Carboniferous Limestone series; and, owing to the seams

cropping out at the surface, coal has been worked here for upwards of six centuries. Some time between 1210 and 1219, Seyr de Quinci granted a coal pit at Preston to the monks of Newbattle—the earliest notice of coal mining in Scotland; and in 1547 the inhabitants took refuge in the coalpits a few days before the battle of Pinkie. The chief existing mines are those of Tranent and Elphinstone, few coals being more prized in the markets of Scotland. Sandstone has been worked in several quarries; and trap is quarried for road-metal. The soil is partly light and sandy, partly reclaimed morass, but chiefly a rich loam, inferior to none in Scotland. Excepting some 50 acres of sandy downs on the coast, and 100 or so of plantation, the entire area is regularly or occasionally in tillage, and wears a finely cultivated aspect. The ancient parish comprehended all Prestonpans (till 1595), and considerable parts of Pencaitland and Gladsmuir; but did not comprise the barony or ancient parish of Seton, which was annexed to it in 1580. Bankton, Elphinstone Tower, Falsdie Castle, St Germain's, and the palace and church of Seton are all noticed separately. Giving off the *quoad sacra* parish of Cockenzie since 1885, Tranent is in the presbytery of Haddington and the synod of Lothian and Tweeddale; the living is worth £355. The three public schools of Tranent, Cockenzie, and Elphinstone, with respective accommodation for 608, 429, and 198 children, had (1893) an average attendance of 533, 291, and 157, and grants of £536, 1s. 6d., £254, 12s. 6d., and £137, 8s. Valuation (1885) £24,631, (1893) £24,415. Pop. (1801) 3046, (1831) 3620, (1861) 4647, (1871) 4852, (1881) 5193, (1891) 5470, of whom 1716 were in Cockenzie *quoad sacra* parish.—*Ord. Sur.*, shs. 33, 32, 1863-57. See P. M'Neill's *Tranent and its Surroundings* (Edinb. 1883; 2d ed. 1884).

Traprain Law, a conspicuous conical hill in Preston-kirk parish, Haddingtonshire, $4\frac{1}{2}$ miles E by S of Haddington, and $1\frac{1}{2}$ mile SSW of East Linton. Rising 724 feet above sea-level, it forms a beautiful and far-seen feature in the rich champaign landscape around it; and from its summit it brings under the eye of a spectator nearly the whole Firth of Forth, a wide expanse of the German Ocean, and part, it is said, of no fewer than thirteen counties. Its ancient name was Duppender, from two Gaelic words which signify 'a steep hill,' and this name is quite descriptive of its character. On the S side it rises almost sheer up from the plain in one grand perpendicular ascent; and on other sides, though admitting sheep and affording them excellent pasturage, it is too steep to be a grazing-ground for cattle. Its composition is a slaty clinkstone, so seamed as to be irregularly columnar, and occasionally merging from a clouded brown to a porphyritic appearance; and towards the summit the clinkstone passes into greenstone of a bluish-grey hue, and slightly granulated with hornblende.—*Ord. Sur.*, sh. 33, 1863.

Traquair, a village and a parish of E Peeblesshire. The village, of some importance during the 12th century, but now dwindled down to a mere hamlet, stands $1\frac{1}{2}$ mile S of Innerleithen, near the right bank of Quair Water, 5 furlongs from its junction with the Tweed, which is near that point crossed by a fine modern girder bridge giving access to Innerleithen, and erected at an expense of £3500.

The parish was formed in 1674 by incorporating with St Bryde's all that portion of the suppressed parish of Kailzie which lay S of the Tweed. It then took the name Traquair, meaning the hamlet on the Quair or winding rivulet. It is bounded N by Innerleithen, E and S by the Selkirkshire parish of Yarrow, and W by Peebles. The length of the parish, from SE to NW, is $8\frac{1}{2}$ miles; and its greatest breadth $7\frac{1}{2}$ miles. In 1891 a detached portion of the parish at Cardrona was united to the rest of the parish by the Boundary Commissioners, who transferred to Traquair the intervening detached portion of the parish of Yarrow, and also another nearly detached part of Yarrow situated north of Minchmuir. The TWEED winds along all the N boundary from E to

W. QUAIR WATER, its affluent, gathers its waters from the slopes of Slake Law (2229 feet), Dun Rig (2438), and Whitknowe Head (1676) in the SW, and follows a tortuous course through the middle of the parish. Of its numerous small tributaries the principal are Newhall, Shillinglaw, Curly, and England Burns, all rising among the hills in the S. The whole of the Quair valley is dotted with lovely birches, relics of the once famous Etrick Forest. It was a clump of these near the village of Traquair of which Crawford sang in *The Bush aboon Traquair*: The Kirk Burn drains the W section of the parish and falls into the Tweed. The greater part of the Selkirkshire boundary is high mountain watershed, and includes, besides the three already mentioned, the following summits of an altitude of 1500 feet and over, viz., Elibank Law (1715 feet), Far Hill (1732), Hare Law (1670), Flora Rig (1567), MINCHMUIR (1856), Scarf Rig (1552), Blake Muir (1522), Duchal Law (1779), Kirkhope Law (1758), and Birkscairn Hill (2169). The hills are mostly of a lumpish form, and generally green on the S side and heather-clad on the N. Large flocks of Cheviot sheep are reared on their pastures. The interior of the parish is hilly, and in many parts rocky and bleak, the heights diminishing in altitude towards the Tweed, whose valley declines to an altitude of 450 feet above sea-level. The rocks are mainly Silurian. The only object of geological interest is an old slate quarry at Grieston on the Traquair estate, which abounds in curious fossils. The mansion-house of Traquair, perhaps the oldest inhabited mansion-house in Scotland, stands in the Quair valley close to the Tweed. It consisted originally of a single tower on the bank of the river, which in those early days took a sharp bend here. The straightening of the course of the river was accomplished by one of the Earls of Traquair. The house has been added to at various times, chiefly during Charles I.'s reign, and now contains the original tower in its NE corner. Built in the style of the old chateau, and standing at the head of a green meadow, with its back towards the river, it now looks down a long broad avenue to the Peebles road. The old-fashioned gateway, flanked by figures of two bears in stone, is said to have suggested to Sir Walter Scott the description of Tully Veolan in *Waverley*. The avenue was closed up in 1796 by the seventh Earl after the death of his countess, and he declared his intention of never having it again opened till another Countess of Traquair should be brought home to fill her place—an event, however, which never happened. The walls of the house are of great thickness; and the interior is fitted up partly in ancient and partly in modern style, and includes the family library and a Roman Catholic chapel. It was originally a royal residence, and was visited from time to time by the Scottish kings and queens. Here William the Lion, some time between 1175 and 1178, granted a charter constituting the hamlet of GLASGOW a bishop's burgh. Mary Queen of Scots and Darnley stayed here for a short time in Aug. 1566, six months before Darnley's tragic death. It is also interesting as being the first place at which Montrose halted during his flight after the disastrous battle of Philiphaugh.

The lands of Traquair were gifted by Robert Bruce to Sir James Douglas, and after passing through the hands of a branch of the Murray family, then to Douglas of Cluny, and afterwards to the Boyds, they were resumed by the crown in 1469. For nine years the property of Dr William Rogers (upon whom James III. had conferred them, much to the disgust of his nobles), they were sold by him in 1478, for a most insignificant sum, to James Stewart, Earl of Buchan, who bestowed them on his natural son James Stewart, the first of the illustrious family of the Stewarts of Traquair. He acquired by marriage the baronies of Ruthersford and Wells, and fell at Flodden (1513), leaving a son William. In 1628 Sir John Stuart was raised to the peerage, under the title of Lord Stuart of Traquair, and in 1638 was further honoured with the dignity of Earl of Traquair, Lord Linton and Caberston. At one

time Lord High Treasurer of Scotland, and Lord High Commissioner of the General Assembly of the Church, he sank, towards the close of his life, to a state of destitution. In the former capacity he played a very prominent part in carrying out the commands of Charles I. regarding the introduction of the liturgy into Scotland, and in the latter presided over the Assembly of 12 August 1639, which ratified the Scottish Covenant. As commissioner, he opened parliament after the assembly, but owing to the incompatibility of its demands with the royal orders, he was obliged to prorogue it. Soon after he was impeached by Parliament as a grand incendiary, and only escaped capital punishment through the efforts of the king. His treasurership was taken from him, and he received a pardon on condition that he did not approach the royal person. His breaking through this condition led to further penalties and his banishment to Scotland. Restored to parliament in 1647, again through the king's intercession, he in 1648 was taken prisoner at the battle of Preston, fighting for the royal cause. He was confined in Warwick Castle for four years, and his estate, considerably drawn upon, was meantime sequestered. He died in 1659, after living some years in great obscurity and abject poverty. A man of great intellectual vigour, he contributed to his own fall through his rashness and inconsistency. By his countess, Catherine Carnegie, he had four daughters and one son, John Lord Linton (b. 1622), who succeeded as second Earl of Traquair, and died 1666, leaving his young family in charge of his second wife, Lady Ann Seton, who, being a staunch Catholic, educated William, third Earl, in that faith. He was succeeded by his brother Charles, fourth Earl (1659-1741), who was succeeded by his sons Charles (fifth) and John (sixth). Then follow in direct descent Charles, seventh Earl, and Charles, eighth Earl. The latter (b. 1781) died unmarried in 1861, the title thus becoming dormant. The last of the line, the venerable Lady Louisa Stuart of Traquair (b. 1776), sister of the eighth Earl, died 6 Dec. 1875 in her hundredth year. The estates passed by will to her kinsman, the Hon. Henry Maxwell, of the ancient family of the Maxwells Earls of Nithsdale, who assumed the name of Stuart on his accession to the property. Herbert Constable Maxwell Stuart (b. 1842; suc. 1890), eldest son of the latter, is present proprietor. Traquair is in the presbytery of Peebles and the synod of Lothian and Tweeddale; the living is worth £326. The parish church, near the right bank of Quair Water, 2½ miles S by W of Innerleithen, was built in 1778, and, as altered in 1821, contains 850 sittings. Attached to the N wall is the burial aisle of the Traquair family. Three public schools—Traquair, Kirkburn, and the Glen—with respective accommodation for 104, 62, and 38 children, had (1893) an average endowment of 67, 26, and 22, and grants of £57, 2s., £41, 11s. 6d., and £32, 0s. 6d. Pop. (1891) 685.—*Ord. Sur.*, sh. 24, 1864. See *Transactions of the Glasgow Archaeological Society* (1893).

Traside, a mansion in Temple parish, Edinburghshire, 8 miles SW of Gorebridge.

Treesbank, a mansion in Riccarton parish, Ayrshire, 2½ miles S by W of Kilmarnock. It was founded about 1672, when James, second son of Sir Hugh Campbell of Cessnock, obtained the estate from his father; and it was enlarged in 1838. The present proprietor is Captain George James Campbell (b. 1832; suc. 1880).—*Ord. Sur.*, sh. 22, 1865. See A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1885).

Treig, Loch, a wild and beautiful lake in Kilmonivaig parish, Invernessshire. Lying 784 feet above sea-level, it extends 5½ miles north-by-eastward; varies in breadth between 1 and 5½ furlongs; is overhung by mountains 2000 to 3658 feet high; abounds in fine trout; sends off the river Treig 2½ miles north-by-eastward to the Spean, at a point 6 miles E of the Bridge of Roy and 18½ ENE of Fort William; and is traversed along its whole eastern shore by the West Highland railway (opened 1894), with a station at Lochtreighhead.—*Ord. Sur.*, shs. 54, 63, 1873.

Treshnish Isles, a group of Hebridean islets, 5 miles NNW of Staffa, $5\frac{1}{2}$ SE of Coll, and 8 W of the entrance of Loch Tuadh in Mull. They are disposed in a chain of between 4 and 5 miles in length from NE to SW; and consist of five principal isles and some intervening rocks. Their whole coasts, with little exception, present perpendicular cliffs of from 40 to upwards of 60 feet in height; and, as seen from a little distance, they possess a singularly interesting appearance, and give a promise, which they but slenderly realise, of disclosing objects of worth to naturalists and the curious. They are mere uninhabited pasture-grounds, carpeted with rich grass, and attached to a farm in Coll. Cairnburgmore and Cairnburgbeg, two of the principal, are separated by a very narrow strait, and are supposed to have anciently formed the limits and the advanced post of the Sudreys or Southern Hebrides. A fortalice on the former seems to have been constructed by the Macleans, on the site of a more ancient strength which history states to have been in the possession of the Norwegians in 1249; and as part of it which remains is a wall with embrasures skirting the edge of the cliff, it most probably was mounted with ordnance. Many books and records rescued from Iona at the time of the suppression of its monastery having been deposited in this fortalice, were destroyed in the course of a siege which the place sustained from a detachment of Cromwell's army. A barrack on Cairnburgbeg is still tolerably entire. Fladda, a third of the principal isles, has a uniformly flat and uninteresting aspect; Linga, a fourth, rises from a low plain by a succession of terraces into a hill 300 feet high; and Back, the fifth, is 'distinguished by a hill which in some positions has the appearance of a hemisphere, from which the whole island acquires the semblance of an ancient shield with the umbo protuberant in the centre.' The isles are composed throughout of amygdaloid and basalt—the latter of perpendicular fracture but not columnar.

Tresta. See FETLAR.

Trinafour, a place, with an inn, in Blair Athole parish, Perthshire, on the right bank of Erichdie Water, $6\frac{1}{2}$ miles W by S of Calvine station.

Trinity, a place on the Firth of Forth, 3 furlongs W of Newhaven, $\frac{3}{4}$ mile E of Granton, and 3 miles W by N of the Edinburgh Post Office. Consisting largely of modern villas, it has a railway station, a pretty Episcopal church (1858), sea-baths, and a chain pier, which is much resorted to by swimmers.

Trinity-Gask, a Strathearn parish of Perthshire, whose church stands $2\frac{1}{2}$ miles S by E of Madderty station on the Crieff branch of the Caledonian railway, and $2\frac{1}{2}$ miles from Dunning station on the Dunblane and Perth section of the same system. It is bounded N by Madderty, E by Findo-Gask, SE by Auchterarder, SW by Blackford, W by Muthill, and NW by Crieff. Its utmost length, from E to W, is $5\frac{1}{2}$ miles; its breadth varies between 5 furlongs and $3\frac{1}{2}$ miles; and its area is $5784\frac{1}{2}$ acres, of which $95\frac{1}{2}$ are water. The EARN winds $6\frac{1}{2}$ miles eastward—for the most part along or near to the southern border; and its sub-affluent, Cowgask Burn, flows north-eastward along part of the Madderty boundary. Sinking beside the Earn to less than 50 feet above sea-level, the surface thence rises northward, so as to form a gently sloping bank, with a summit altitude of 306 feet at a point $\frac{3}{4}$ mile E by N of the church. This higher ground commands a fine view of the beautiful strath and its hill-screens; but elsewhere the parish is nearly flat, and has but a slight elevation above the river. The Earn, over all its connection with the parish, flows in beautiful sinuosities between pleasant banks, richly adorned in many places with natural and planted wood. A spring called Trinity Well, a little to the S of the manse, had great celebrity in pre-Reformation times for performing cures, and for affording protection against plague and witchcraft. A mineral spring was discovered about 1850 in a marshy place near Cowgask Burn. Its waters possess properties similar in many respects to those of Airthrey at Bridge of Allan. A trap dyke runs from E to W, parallel with

the northern boundary, and occasionally rises into rugged ridges. A soft red argillaceous rock forms a sort of chasm or ravine for the Earn in the W, but, becoming mingled with mica, passes into sandstone in the centre and E—the Old Red which prevails throughout the strath. The soil is very various. Nearly 1000 acres are under wood; and the rest of the area is mostly in tillage. The old Roman road from Stormont to Ardoch runs from E to W through the N of the parish, near whose highest point long stood the curiously-sculptured 'Borestone,' $5\frac{1}{2}$ feet high, which in 1834 was removed to Moncreiffe. GASKON HALL and St Bean's church of KINKELL are noticed separately, as also are the mansions of COLQUHALLZIE and MILLEARNE. Trinity-Gask is in the presbytery of Auchterarder and the synod of Perth and Stirling; the living is worth £222. The present parish comprises the ancient parishes of Kinkell and Easter Gask, the latter of which had a second place of worship at a spot still known as Chapel-hill; and the union of the three churches into one parish is said to have given rise to the name of Trinity-Gask. The local pronunciation, however, is 'Tartny.' The parish church, built in 1770, contains 195 sittings. Kinkell U.P. church, containing 800 sittings, was built about 1790; and the public school, with accommodation for 54 children, had (1893) an average attendance of 45, and a grant of £47, 11s. Valuation (1885) £6838, 8s. 7d., (1892) £5588, 5s. Pop. (1801) 796, (1871) 415, (1881) 396, (1891) 386.—*Ord. Sur.*, sh. 47, 1869.

Trochrie. See DUNKELD, LITTLE.

Tromie. See GLENTROMIE.

Tronach Castle. See RATHVEN.

Trondra, an island of Tingwall parish, Shetland, $\frac{1}{2}$ mile S of Scalloway. It extends $2\frac{1}{2}$ miles south-by-westward, and has an utmost breadth of $\frac{3}{4}$ mile. Pop. (1871) 126, (1881) 133, (1891) 154.

Trool Loch, a beautiful lake of MINNIGAFF parish, W Kirkcudbrightshire, 14 miles N of Newton-Stewart. Lying 250 feet above sea-level, it extends $1\frac{1}{2}$ mile south-westward, has a maximum width of $1\frac{1}{2}$ furlong, and sends off the Water of Trool $1\frac{1}{2}$ mile west-south-westward to the Water of Minnoch.—*Ord. Sur.*, sh. 8, 1863.

Troon (Cymric *trwyn*, 'a nose or promontory'), a seaport town and watering-place in Dundonald parish, Ayrshire, at the terminus of the Troon and Kilmarnock branch (1812) of the GLASGOW AND SOUTH-WESTERN RAILWAY, and $\frac{3}{4}$ mile W of its Ayr and Irvine section (1837). By road it is 6 miles S of Irvine, 6 N by W of Ayr, and 31 SW by S of Glasgow, whilst by rail it is $9\frac{1}{2}$ miles SW of Kilmarnock, $7\frac{1}{2}$ NNE of Portpatrick, and 8 S by E of Kilwinning Junction. It takes its name from a low rocky promontory, curving $1\frac{1}{2}$ mile westward and north-westward at the middle of the Bay of Ayr, and measuring $\frac{1}{2}$ mile in mean breadth. In its natural state this headland was covered with rich pasture towards the land, but became naked rock towards the extreme narrowing point. A continuation of it extends a short distance beneath the sea, so as to be concealed even at low water. The embayed marine space embraced by it is by far the best natural harbour in Ayrshire, affording safe anchorage-ground from every quarter except the NW; and, at half a cable's length from the rock, it has, at half-flood, a depth of 3 fathoms. The Glasgow merchants, aware of its advantages, made a vain effort to purchase the circumjacent property for the erection of a seaport; and, in consequence of the repulse they met, were obliged to select the very inferior site of Port-Glasgow (1668). After the lapse of 140 years, the third Duke of Portland, who had purchased the FULLARTON estate in 1805, commenced in 1808 a series of vigorous operations to render the place fully available for commerce. He first built a pier 500 feet long, nearly at right angles with the rock, where the depth is 19 feet at low water, and he afterwards constructed a fine wet dock with floodgates, two graving-docks, a lighthouse, and large storehouses. Due encouragements were offered to render Troon a resort of trade and a seat of population, and they were rapidly followed by success, so that a town arose where before

TROON

had been only some saltpans and an old smuggling inn. After the disastrous storm of Jan. 1899, when 22 ships were driven from their moorings, and some of them totally wrecked, a breakwater was erected, 3000 feet long. The total length of quays is now 5300 feet; and the cost of the harbour works, from first to last, has exceeded half a million. There are three light-houses—one at the inner end of the pier, erected in 1827; another at the pierhead, erected in 1848; and the third on the S breakwater, erected in 1889. The first shows a white light, and the second and third red lights. Troon ranked as a creek of Irvine till 1863, when it was constituted a head port. The total tonnage of vessels belonging to it has dwindled from 5380 in 1873 to 2870 in 1878, to 2539 in 1884, and to 629 in 1893, viz., 2 sailing ships of 417 tons, and 3 steamers of 212. The following table gives the tonnage of vessels that entered and cleared from and to foreign countries and coastwise, with cargoes and in ballast:—

Year.	ENTERED.			CLEARED.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1873	291,715	58,545	350,260	285,988	57,714	343,702
1879	309,690	20,449	330,069	294,323	19,842	314,165
1883	108,551	2,016	108,567	105,985	2,015	108,000
1893	281,489	11,121	292,610	275,478	11,978	287,454

Shipbuilding is carried on, 27 vessels, of 487 tons each on an average, having been built here during the five years 1889-93. There are also rope and sail works and a sawmill.

Sweeping in a graceful curve from the central height of the peninsula across the isthmus, and stretching for a considerable extent along the South Beach, the town is a scattered and healthy place, with dry soil and bracing atmosphere, and with beautiful views of Arran, Ailsa Craig, and all the Ayrshire coast from Turnberry Castle to Ardrossan. In 1895 a reservoir was constructed at Halyards in connection with a new supply of gravitation water from the Dundonald Hills for the town and harbour. When full the reservoir contains 44 million gallons of water, or sufficient to give a daily supply of 200,000 gallons during a period of 220 days, and the estimated expense of the whole undertaking was £12,300. Troon has a post office (removed in 1894 to premises in the buildings of the Unionist Club), with money order, savings bank, and telegraph departments, branches of the British Linen Co. and Union Banks, 2 hotels, a gas company, a custom house, a reading room, Unionist Club (opened in 1895), an hospital, a lifeboat (1871), etc. A new parish church and hall, in red stone, with tower and spire 180 feet high, was erected in Ayr Street in 1893-94 at an estimated expense of £10,000. Other places of worship are a handsome Gothic Free church (1857; 600), a U.P. church (1843; 500), and St Patrick's Roman Catholic chapel (1883). Portland public and St Patrick's Roman Catholic schools have respective accommodation for 604 and 172 children. Troon is a favourite resort of summer visitors, having good sea-bathing, and a splendid reach of sands on both its northern and its southern shore. For the comfort of visitors seats have been placed on the South Beach Promenade and at several other places. In 1878 part of its links, here known as 'knowes,' was laid off as a golfing-ground, and a golf club started, which numbers over 500 members. There is also a ladies' club, with a course of their own. Three miles off the coast is the Lady Isle, a favourite destination for boating parties. With a safe harbour for boats, the island is nearly a mile in circumference, and was at one time connected with a religious establishment on the mainland named Lady Kirk. It now belongs to the Duke of Portland, who is the superior of Troon, and whose seat of FULLARTON HOUSE is about a mile from the town. Near this stands the ivy-covered ruin of Crosbie, the residence of an uncle of Sir William Wallace, and whose treacherous murder led to the memorable burning of the Barns of Ayr. The estate of Hillhouse, belonging to the M'Ker-

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rells from time immemorial, was purchased in 1894 by the Duke of Portland, who now owns the foreshore from Prestwick as far as Irvine. Hillhouse was the temporary residence of Louis Napoleon (afterwards Emperor of the French) when he took part in the famous Eglington tournament in 1839. The *quoad sacra* parish is in the presbytery of Ayr and the synod of Glasgow and Ayr; the living is worth £350. Pop. of *q.s.* parish (1881) 2587, (1891) 3849; of town (1836) 1038, (1841) 1409, (1851) 2404, (1861) 2427, (1871) 2790, (1881) 2383, (1891) 3315, of whom 1690 were females. Houses (1891) inhabited 665, vacant 30, building 12.—*Ord. Sur.*, sh. 22, 1865. See the Rev. J. Kirkwood's *Troon and Dundonald* (Kilmarnock, 1875; 3d ed. 1881).

Troqueer, a parish of E Kirkcudbrightshire, containing the burgh of MAXWELLTOWN. It is bounded N by Terregles, E by Dumfries and Caerlaverock, SV by Newabbey, and W by Lochrutton. Its utmost length, from NNW to SSE, is 8½ miles; its utmost breadth is 4½ miles; and its area is 19½ square miles or 12,354 acres, of which 567½ are foreshore and 112 water. The NITH, here broadening to a tidal estuary, curves 8½ miles south-by-eastward along or near to all the Dumfriesshire border; CARGEN Water and Crooks Pow run across the interior to the Nith; and March Burn, with continuation to the Nith by NEWABBEY Pow, traces most of the south-western boundary. The surface, generally level throughout the N and E, has yet some agreeable though gentle diversities, and from S to N attains 191 feet near Airds, 639 near Auchanef House, 817 at Marthorn Hill, and 125 at Corbely Hill. The last of these in particular, rising at the S end of Maxwelltown, and opposite the lower part of Dumfries, is a lovely eminence, crowned by the fine convent and church (1831-84) of the Immaculate Conception, and commanding a delightful prospect. The general surface of the parish is naturally sectioned into three parts by three ranges of elevations, which extend parallel one to another, and at almost equal distances, like waves of the sea. The first range rises with a gradual acclivity from the Nith, lies all within the burgh-woods of Maxwelltown, and, in so far as not occupied by the streets of the burgh, presents a richly cultivated aspect. The tract between this range and the second is traversed from end to end by sluggish Cargen Water, and is all in a state of high culture. The second range rises to a greater height than the first, extends considerably farther to the S, and is likewise all under cultivation. A large portion of the tract between the second range and the third is either moss or meadow, in an unsightly state, but largely capable of reclamation. The third range is much higher than the second, extends from end to end of the parish, and is mainly under tillage, but partly occupied by extensive plantations. The predominant rock of all the ranges is mica slate, running into syenite, with occasional protrusions of granite; and the soil of both the slopes and level grounds is mostly fertile, but ranges in character from reclaimed moss to rich loam. The chief antiquity is a moat, or circular artificial mound, supposed to have been anciently a seat of courts of justice. Besides numerous villas of commodious and elegant character, the principal estates and mansions—all noticed separately—are Cargen, Carruchan, Dal-skaith, Goldieles, Kirkconnell House, Mabie, Mavis Grove, and Terraughtie. The present parish of Troqueer comprises the ancient parish of Troqueer and the northern part of the ancient parish of Kirkconnell. The ancient church of Troqueer belonged to the abbey of Tongland, and passed in 1588 to William Melville, the commendator of that monastery, but was annexed in 1605 to the see of Galloway. The parish of Kirkconnell was suppressed in the reign of Charles I., and divided between Troqueer and Newabbey. Its church stood in the Troqueer section, 1½ mile NE of Newabbey village. The Rev. John Blackadder (1615-85), who figured conspicuously among the ministers ejected at the introduction of prelacy, was minister of Troqueer from 1652 till 1662. Giving off the *quoad sacra* parish

of MAXWELLTOWN, Troqueer is in the presbytery and synod of Dumfries; the living is worth £486. Its parish church, near the right bank of the Nith, 7 furlongs SSE of the centre of Maxwelltown, was renovated in 1887. Four public schools—Drumslet, Laurieknowe, Maxwelltown, and Whinnyhill—with respective accommodation for 127, 422, 388, and 87 children, had (1893) an average attendance of 32, 325, 275, and 32, and grants of £23, 6s., £365, 12s. 6d., £307, 11s. 6d., and £37, 15s. 6d. Pop. (1801) 2774, (1871) 5402, (1881) 5524, (1891) 5887, of whom 3662 were in Troqueer ecclesiastical parish.—*Ord. Sur.*, shs. 9, 10, 5, 6, 1857-64.

Trossachs (Gael. 'bristled territory'), a romantic mountain defile of SW Perthshire, on the southern border of Callander parish, extending 1 mile westward from the head of Loch Achray to the foot of Loch Katrine, and forming a portal of the Western Highlands. Flanked to the N by Ben A'an (1851 feet), and to the SW by huge BEN VENUE (2393), the Trossachs are a contracted vale, whose sides are soaring eminences wildly and irregularly feathered all over with hazels, oaks, birches, hawthorns, and mountain-ashes, and whose central space is 'a tumultuous confusion of little rocky eminences, all of the most fantastic and extraordinary forms, everywhere shagged with trees and shrubs,' and presenting 'an aspect of roughness and wildness, of tangled and inextricable boskiness, totally undiscovered, it is supposed, in the world.' Thus the discoverer of the Trossachs' beauties, the Rev. Dr Robertson, who was presented to the parish of Callander in 1768, and who winds up six closely printed pages with the remark that 'In a word, the Trossachs beggar all description.' Many since him have here tried their hands at 'word-painting,' among them Dorothy Wordsworth, Nathaniel Hawthorne, and Alexander Smith; but the finest description is always Sir Walter Scott's in the *Lady of the Lake* (1810):—

'The western waves of ebbing day
Roll'd o'er the glen their level way;
Each purple peak, each flinty spire,
Was bathed in floods of living fire.
But not a setting beam could glow
Within the dark ravine below.
Where twined the path in shadow hid,
Round many a rocky pyramid.
Shooting abruptly from the dell
Its thunder-splinter'd pinnacle;
Round many an insulated mass,
The native bulwarks of the pass,
Huge as the tower which builders vain
Presumptuously piled on Shinar's plain.
The rocky summit, split and rent,
Form'd turret, dome, or battlement,
Or seem'd fantastically set
With cupola or minaret,
Wild crests as pagod ever deck'd,
Or mosque of Eastern architect.
Nor were these earth-born castles bare,
Nor lack'd they many a banner fair;
For, from their shiver'd brows display'd,
Far o'er the unfathomable glade,
All twinkling with the dewdrops seen,
The briar-rose fell in streamers green,
And creeping shrubs, of thousand dyes,
Waved in the west wind's summer sighs.

'Boon Nature scatter'd, free and wild,
Each plant or flower, the mountain's child.
Here eglantine embosom'd the air,
Hawthorn and hazel mingled there;
The primrose pale, and violet flower,
Found in each cliff a narrow bower;
Foxglove and nightshade, side by side,
Emblems of punishment and pride.
Group'd their dark hues with every stain
The weather-beaten crags retain.
With boughs that quaked at every breath
Grey birch and aspen wept beneath;
Aloft, the ash and warrior oak
Cast anchor in the rifted rock;
And, higher yet, the pine-tree hung
His shatter'd trunk, and frequent flung,
Where seem'd the cliffs to meet on high,
His boughs athwart the narrow'd sky.
Highest of all, where white peaks glanced,
Where glistening streamers waved and danced,
The wanderer's eye could barely view
The summer heaven's delicious blue:
So wondrous wild, the whole might seem
'The scenery of a fairy dream.'

The castellated Trossachs Hotel, 8 miles W by S of Callander, stands at the entrance of the defile, near the northern shore of Loch Achray, and was built by Lord Willoughby de Eresby in 1852, in place of a humble wayside inn, formerly a cottage, which bore the euphonious name of *Ardeacanachrochan*, 'the dwelling at the end of the knoll.' In 1877 extensive additions were made to the hotel, and in 1890 a large wing was added at the west side. It is connected with Callander by telegraph. For the angler, Loch Katrine and Loch Achray afford good sport. A little to the SE are the pretty little church and the manse of the *quoad sacra* parish of the Trossachs, which is in the presbytery of Dunblane and the synod of Perth and Stirling. Pop. of parish (1881) 302, (1891) 371, of whom 80 were in Aberfoyle, 267 in Callander, and 24 in Port of Monteith.—*Ord. Sur.*, sh. 38, 1871.

Trotternish. See SKYE.

Troup House, a mansion in GAMRIE parish, Banffshire, near the coast, and 3 miles ENE of Gardenstown. Built about 1772, it is the seat of Francis William Garden-Campbell, Esq. (b. 1840; suc. 1848).—*Ord. Sur.*, sh. 97, 1876.

Truim. See GLENTRUIM.

Trumland House. See ROUSAY.

Tuadh, Loch. See MULL.

Tuiteam-Tarbhach. See KINCARDINE, in Ross and Cromarty.

Tulchan Lodge, a handsome two-storey shooting-box, built about 1848, in Cromdale parish, Elginshire, 2½ miles WNW of Advie station.

Tulla, Loch. See GLENORCHY.

Tulliallan (Gael. *tulach-ahluinn*, 'beautiful knoll'), a parish which, until 1891, formed along with Culross parish one detached part of the county of Perth. In that year both parishes were placed by the Boundary Commissioners wholly in the county of Fife. Tulliallan contains the small port of KINCARDINE, on the NE shore of the river Forth, with a terminal station on the Alloa and Kincardine branch of the North British railway (opened Dec. 1893), and 3 miles S by W of Kincardine station on the Stirling and Dunfermline section. The ancient parish comprised only the barony of Tulliallan; but the present parish, since 1673, has included also the barony of Kincardine and the lands of Lurg, Sands, and Kellywood, which previously belonged to Culross parish. It is bounded W and N by Clackmannan, E by Culross, and S and SW by the river Forth. Its utmost length, from N to S, is 3½ miles; its utmost breadth is 3 miles; and its area is 4176½ acres, of which 434 are foreshore and 106½ water. The surface slopes gently southward to the Forth. It comprises part of a gentle broad-based hill (324 feet), which has declivities to the N and NE, but is itself well sheltered in these directions by rising-ground and extensive plantations. The hill looks beautiful in both form and shelter, and is supposed to have given name to the parish. The coast, inclusive of curvatures, has an extent of 3½ miles. From the western boundary to the New Pans the shore is level; and thence to the extreme E, it abounds in rocks which are either bare or covered with the tide. In 1823-39 a considerable extent of valuable land, as noticed in our article on KINCARDINE, was reclaimed from the tide by means of two extensive embankments. Nearly 500 acres are under wood; and almost all the rest of the area is either regularly or occasionally in tillage. The soil is variously reclaimed peat, moorish mould, coarse clay, fine loam, and rich alluvium. The rocks belong to the Carboniferous formation; and sandstone of excellent quality has long been worked in the vicinity of Longanet. Coal and ironstone also abound. Of the ancient castle of Tulliallan, 1 mile N by W of Kincardine, nothing remains but the ground storey. It seems to have been a place of considerable strength, engirt by a moat, which communicated with the Forth. The lands of Tulliallan, long possessed by the Blackadders, in 1798 were purchased by the distinguished admiral, the Hon. Sir George Keith-Elphinstone, K.B. (1747-1823), who

in 1814 was created Viscount Keith, and who in 1818-20 built the noble modern castle of Tulliallan, 5 furlongs N by E of Kincardine. On the death of his elder daughter, the Baroness Keith and Nairne, and Comtesse de Flahault (1788-1867: see MEIKLEOUR HOUSE), Tulliallan passed to her half-sister, the Hon. Mrs Villiers (1809-92), who in 1870 formed a second marriage with Lord William Godolphin Osborne, a brother of the eighth Duke of Leeds. It now belongs to the Marquis of Lansdowne, the son of Lord Keith's granddaughter, and the grandson of Count Flahault. Another mansion, SANDS, is noticed separately. Tulliallan is in the presbytery of Dunblane and the synod of Perth and Stirling; the living is worth £293. The churches are described under KINCARDINE. Tulliallan and Kincardine public school, with accommodation for 528 children, had (1893) an average attendance of 371, and a grant of £401, 8s. 11d. Valuation (1885) £8969, (1893) £8411, 14s. 7d. Pop. (1801) 2800, (1831) 3550, (1861) 2410, (1871) 2184, (1881) 2207, (1891) 2177. See D. Beveridge's *Cutross and Tulliallan and Between the Ochils and the Forth* (Blackwood, Edin.).—*Ord. Sur.*, sh. 39, 1869.

Tullibardine. See BLACKFORD.

Tullibody, a village in Alloa parish, Clackmannanshire, 2½ miles NW of the town. It claims to have been founded by Kenneth MacAlpine about the year 844; and its church was built by David I. in 1149, Tullibody being a separate parish till 1600, when it was united to Alloa. In 1559 the French troops under D'Oysel employed the roof of this church to replace a demolished bridge across the Devon; and the building remained dismantled till the middle of the 18th century, when it was again covered in by George Abercromby of Tullibody. Put in repair in 1873, service is now conducted in it occasionally. It is the mausoleum of the Abercromby family. A neat Free church dates from Disruption times; and Tullibody has also a post office under Cambus, and a public school. Tullibody House is a plain old mansion, near the left bank of the winding Forth, and 1½ mile W by N of Alloa. (See AIRTHREY, ALLOA, and MENSTRIE.) Pop. of village (1861) 602, (1871) 694, (1881) 694, (1891) 686.—*Ord. Sur.*, sh. 39, 1869.

Tullich. See GLENMUCK.

Tulliebelton. See AUCHTERGAVERN.

Tulliehole. See FOSSOWAY.

Tulloch Castle, a fine mansion in Dingwall parish, Ross and Cromarty, 1 mile N of the town. Its owner is Duncan Davidson, Esq. (b. 1865; suc. 1891).

Tullochgorum, the native seat of a branch of the Clan Grant, in Duthil and Rothiemurchus parish, Inverness-shire, near the left bank of the Spey, 6¼ miles SW of Grantown, and 3 NE of Boat of Garten. See LONGSIDE and GORDON CASTLE.

Tullybeagles. See METHVEN.

Tullybelton. See AUCHTERGAVERN.

Tullymet, a mansion in Logierait parish, Perthshire, 2¼ miles NE of Ballinluig Junction. There are a post office of Tullymet under Ballinluig, a Baptist chapel (1806), and a Roman Catholic church (1855).—*Ord. Sur.*, sh. 55, 1869.

Tullynessle and Forbes, a parish in Alford district, Aberdeenshire. It comprehends the ancient parishes of Tullynessle and Forbes, united in 1808; and contains the hamlets of Tullynessle and Forbes, the former 2½ miles NNW of Alford station, the latter 1½ mile WNW of that station, and possessing a post office under Alford. The united parish is bounded N by Clatt, NE by Leslie, E by Keig, S by Alford, SW by Kildrummy, and W by Auchindoir. Its utmost length, from E to W, is 6 miles; its utmost breadth is 4 miles; and its area is 11,329½ acres, of which 504 are water. The river Don has here an easterly course of 7½ miles along the southern boundary. From the interior it is fed by the Burn of ESSER and two or three lesser rivulets. In the extreme SE the surface sinks beside the Don to 396 feet above sea-level; and thence it rises to 1042 feet at Crannieat Hill, 1876 at Manabattok Hill, 1747 at Callievar on the Kildrummy boundary, 1649 at Lord Arthur's Cairn on the Auchin-

doir boundary, and 1362 at Suis Hill on the northern boundary, the two last being summits of the Correen Hills. Granite, gneiss, and mica slate are the predominant rocks. Excellent granite has been quarried for building purposes, and strongly stratified mica slate for pavement slabs; whilst a coarsish limestone was at one time worked. The soil on the low tracts adjacent to the Don and to parts of the burns is alluvium, on the skirts or lower slopes of the hills is mostly a good loam, and on the higher ground is much of it stony. Fully one-third of the entire area is in tillage, nearly one-eighth is under wood, and most of the rest is hill pasture. The small old castellated mansion of Terpersie or Dalpersie, a farmhouse now, but till 1745 the seat of a branch of the Gordons, stands 1 mile NW of Tullynessle church. Several ancient Caledonian stone-circles have almost all been removed; but the site of General Baillie's encampment on the eve of the Battle of Alford (1645) is still pointed out near Mountgarrie. Mansions, noticed separately, are WHITEHAUGH and LITTLEWOOD. Tullynessle is in the presbytery of Alford and the synod of Aberdeen; the living is worth £286. The parish church at Tullynessle hamlet was built in 1876 at a cost of £2000, and contains 500 sittings. A belfry, which is preserved, bears date 1604, and has done duty for at least two previous churches. Two public schools are Scots' Mill and Tullynessle, the latter of which had in 1893 accommodation for 180 children, an average attendance of 99, and a grant of £93, 4s. 6d. Pop. (1801) 536, (1831) 778, (1861) 957, (1871) 970, (1881) 981, (1891) 975.—*Ord. Sur.*, sh. 76, 1874.

Tummel, a lake and a river in the N of Perthshire. Loch Tummel, on the mutual border of Dull and Blair Athole parishes, 8½ miles W by N of Pitlochry, is formed by expansion of the river; and, lying 480 feet above sea-level, extends 2½ miles eastward, with a maximum breadth of ½ mile. Its banks are beautifully diversified with little bays and headlands, with rocks and woods, with dwellings and cultivated fields; and its flanks rise grandly up into masses of rugged mountain 1318 to 2559 feet high. A wooded artificial islet lies near its foot; and on this are the vestiges of a castle, which is said to have been one of the many fastnesses of Robertson of Struan, the chief of the clan Donachie. Pike are numerous; and the trout, ranging between 1 and 10 lbs. in weight, are superior in both shape and flavour to those of Loch Leven. A highish point on the lake's N side, on the line of the public road from Pitlochry to Kinloch-Rannoch, had received the name of the 'Queen's View' some time prior to 3 Oct. 1866, when the Queen first visited it, and here took tea. It commands a prospect of almost the entire basin of the river, from the mountains in the vicinity of Glencoe to those southward from Ben Vrackie—one of the grandest glen views in the United Kingdom.

The river Tummel, issuing from the foot of Loch Rannoch, runs 19¼ miles eastward and 9½ south-eastward, till, near Ballinluig Junction, it forms a confluence with the TAY, of whose main stream it is really a head-stream. It bounds or traverses the parishes of Forthingall, Blair Athole, Dull, Moulin, and Logierait. At a point 4½ miles below the lake, it receives the very large tribute of the GARRY, below and above whose confluence the Tummel, as to both its current and its banks, possesses widely different characters. Below, it is a stately stream, grave and majestic in motion, gemmed along its bosom with many pretty islets, and wending among numerous cornfields and enclosed pastures, screened with mountainous heights less wild in character, and much softer in dress, than by far the greater part of those in the Highlands. But above where it receives the Garry it is almost constantly impetuous, tumbles along in rapids, cataracts, and cascades, tears up and rolls before it considerable masses of rock, and runs through a close and wooded mountain glen, so narrow that, with very little exception, the alpine acclivities rise immediately from the water, leaving no flat land or space of any kind on its margin. The narrowness and prolongation of this upper glen,

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the sudden rise and the loftiness of its boundaries, the great variety and the wonderful intricacy of their outline and surface, the profusion of forest and the intersection and clouding of it with rocks and ravines—these, and the exquisite forms and arrangements of the forested and scattered birches which here form the only wood, render this upper glen of the Tummel decidedly richer in the beauties of a grand and romantic style of landscape than any other space of equal extent in Scotland. Near the junction of the Garry stands FASKALLY HOUSE, amid a scene which is magnificently pretty—strongly pleasing but soon exhausted. A considerable space below this, and towards Pitlochry, makes a remote approach to the character of the upper glen, and exhibits continuous alternations of picture and romance.

But the grand attraction of the Tummel is its celebrated fall, near the foot of the upper glen. Though by no means so high as the Falls of Foyers and of Bruar, it is almost as grand, on account of the greater volume of its water. In the face of a tremendous rock NW of the fall is a cave, to which there is only one and a very difficult passage. A party of the Macgregors are said to have been surprised in this cave during the period of their proscription, and some of them slain on the spot, while a remnant climbed a tree which grew on the face of the rock, and were precipitated to the bottom by their pursuers cutting away the tree from its root.—*Ord. Sur.*, sh. 55, 1869.

Tummel Bridge, a place in the NW of Dull parish, Perthshire, on the S bank of the Tummel, 7 miles E of Kinloch-Rannoch, 14 W by N of Pitlochry, 8 N by W of Coshieville, and 5 SE of Trinafour. It has a post office under Pitlochry, a hotel, a Free church, a public school, and a fair on the Monday before the last Tuesday of October. The Episcopal church (1812; 80 sittings) has fallen into disrepair, but a new one is about to be built.

Tundergarth, a parish of Annandale, Dumfriesshire, containing Bankhill village, 4 miles E of the post-town, Lockerbie. A long narrow strip of country, descending south-westward from the watershed with Eskdale to within 2½ miles of the river Annan, it is bounded NW by Dryfesdale and Hutton, NE by Westerkirk and Langholm, SE by Middlebie and Hoddom, and SW by St Mungo. Its utmost length, from NE to SW, is 9½ miles; its breadth varies between 5½ furlongs and 3½ miles; and its area is 16½ square miles or 10,513½ acres, of which 32 are water. From a point ½ mile below its source (780 feet above sea-level), the Water of MILK runs 12½ miles south-westward along all the Hutton and Dryfesdale and most of the St Mungo boundary, receiving by the way a dozen indigenous rivulets with an average length of about 1½ mile. The general surface of the parish is, in consequence, a declination to the Milk; but it is singularly broken into steep-sided vales and glens, and abounds in picturesque scenes. In the extreme SW it sinks to 295 feet above sea-level; and thence it rises north-eastward to 869 feet at a *northern spur of BRUNSWARK HILL, 859 at *Risp Fell, 1045 at *Grange Fell, 992 at Blackston Hill, 1460 at *Hen Hill, and 1089 at Friar Edge, where asterisks mark those summits that culminate on or near to the south-eastern and north-eastern boundaries. Greenstone, clay slate, mica slate, and greywacke are the predominant rocks; and antimony has been found in small quantities. The soil of the lower grounds is partly thin and stony, but mostly fertile; of the higher grounds, is of cold character, resting on a retentive sub-soil. Not much more than one-fourth of the entire area is in tillage, about 150 acres are under wood, and the rest of the land is either pastoral or waste. Antiquities are remains of a Caledonian stone circle, the 'Seven Brethren,' on Whiteholm farm; a reach of the Roman road from Brunswark to Upper Nithsdale; small entrenched camps of the kind provincially called birrens on a number of elevated spots; and the site of an ancient baronial fortalice called Tundergarth Castle. Some visitors admire Linhead Linn more than Haw-

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thornden. Tundergarth is in the presbytery of Lochmaben and the synod of Dumfries; the living is worth £186. The parish church, 1¼ mile SW of Bankshall, was built in 1771. The public school, with accommodation for 91 children, had (1893) an average attendance of 73, and a grant of £82, 4s. Pop. (1801) 485, (1831) 530, (1861) 570, (1871) 510, (1881) 466, (1891) 439.—*Ord. Sur.*, sh. 10, 1864.

Turing's Tower. See FOVERAN.

Turin Hill. See RESCOBIE.

Turk. See GLENFINGLAS.

Turnberry Castle, a fragmentary ruin on the coast of Kirksowald parish, Ayrshire, 6½ miles N of Girvan. When or by whom it was built is quite uncertain, but it seems to have been a stronghold of the old Celtic Lords of GALLOWAY, and afterwards of the Earls of CARRICK—a title bestowed in 1186 by William the Lion on Duncan, the grandson of Fergus of Galloway. Duncan's grand-daughter, Margaret, by her romantic second marriage with Robert de Brus in 1271, conveyed to him both the castle and earldom; and Turnberry disputes with LOCHMABEN the honour of being the birthplace of Robert Bruce (1274-1329), the greatest of Scotland's kings. On 20 Sept. 1286 it was the meeting-place of the great Scottish barons who supported the title of Bruce the 'competitor' to the Crown; and in the spring of 1307 it was recaptured from the English by King Robert Bruce. So at least says the tradition which Scott has so finely versified in *Canto Fifth* of his *Lord of the Isles*; but, according to Dr Hill Burton, Bruce 'found the castle so well garrisoned by Percy that attack was useless. Fortune favoured his adventure, however, in another shape, for in a night attack on Percy's army, close at hand, he caused havoc and panic, and, what was of some moment, gained a valuable booty.' The ruin has suffered so severely from the action of sea and weather, and the ruthless hand of man, as to have little more remaining than its lower vaults and cellars; but from indications which are furnished by these, by some vestiges of a drawbridge, and by the extent of rock which seems to have been included in the site, the castle appears to have been a fortress of great size and strength. It occupies a small low promontory, so as to be washed on three sides by the sea; and on the land side it overlooks a rich plain of upwards of 600 acres. Its site commands a full prospect of all the lower Firth of Clyde. About a mile E. lies the farm of Shanter, tenanted in the time of Burns by Douglas Graham, the hero of the poem 'Tam o' Shanter.' A lighthouse, built on part of the castle's site in 1873, rises to a height of 64 feet, and exhibits a light flashing once every 12 seconds, and visible at a distance of 15 nautical miles.—*Ord. Sur.*, sh. 13, 1870.

Turner Hall, an old mansion in Ellon parish, Aberdeenshire, 3 miles N by W of Ellon village.

Turret Burn. See GLENTURRET.

Turriff, a police burgh and a parish of NW Aberdeenshire. The town stands, 166 feet above sea-level, near the right bank of Idoch Water or the Burn of Turriff, and ¾ mile ESE of Eastside Bridge across the river Deveron, a three-arched sandstone structure, erected in 1826 at a cost of more than £2500. It has a station on the Turriff and Macduff branch (1857-60) of the Great North of Scotland railway, 11½ miles S by E of Macduff, 18 N of Inveramsay Junction, and 38½ NNW of Aberdeen. With a central square, from which a number of streets diverge, the town is mainly built of red Delgaty sandstone, somewhat dingy in hue; but the general aspect is neat and clean, and Turriff on the whole is one of the most flourishing smaller towns in the N of Aberdeenshire. It has a post office, with money order, savings bank, insurance, and telegraph departments, branches of the Commercial, North of Scotland, Union, and Town and County Banks, a local savings bank (1817), a town-hall, several hotels, a gas company (1839), agricultural and horticultural societies, a Young Men's Christian Association, with a reading-room, etc. The North of Scotland Bank, erected in 1875, and Scottish

Baronial in style, has a square clock-tower 63 feet high. A new hospital, with adjuncts, was erected by the Turriff District Committee of the County Council in 1895. The ancient market-cross, 20 feet high, was repaired in 1841, and re-erected in 1865. The old parish church 'is supposed to have been built by Malcolm Ceanmor' (1058-93); but its dedication to St Comgan or St Congan (ordinarily pronounced Cowan) inclines one to refer its foundation to the latter half of the 7th century. Marjory, Countess of Buchan, gave it in 1214 to Arbroath Abbey; and in 1272 Alexander Comyn, Earl of Buchan, attached it to an almshouse or hospital for thirteen poor husbandmen of Buchan. This establishment had a warden and six chaplains, who wore the dress of secular monks; and it possessed, with some limitations, the right of sanctuary for criminals. King Robert Bruce appears to have further endowed it for the maintenance of a chaplain to say masses for his brother Nigel Bruce, slain by the English after their capture of the Castle of Kildrummy. In 1412 the church was erected into a prebend of Aberdeen, and its parsons or prebendaries of the parish seem to have always been the wardens of the hospital; at least, from that date till the Reformation, they held the lands with which the Earl of Buchan had endowed it. In 1511 the whole kirklands, village, and glebe were, by a charter under the great seal, erected into a free burgh of barony, in favour of Thomas Dickson, prebendary of Turriff. The church is said to have been a stately structure, 120 feet long and 18 wide; but only the choir and belfry remain. The belfry contains a fine-toned bell, bearing date 1557, which, having for thirty-four years been transferred to the new parish church, was restored to its former position in 1828, when a clock was purchased by public subscription; and in the choir has been discovered a curious wall-painting of St Ninian. There is reason to believe that there had been a series of pictures all round the church. A monument on the N wall bears the date 1636, and six Latin elegiacs on one of the Barclays of Tollie. In the churchyard are several other interesting monuments, belonging to the 16th and the 17th century; and here, too, is buried Bishop Alexander Jolly, D.D. (1755-1838), the first ten years of whose ministry were spent at Turriff. (See FRASERBURGH.) The present parish church was built in 1794, and enlarged in 1830. A plain but commodious edifice, it was adorned in 1875 with a stained-glass window to the memory of the late Garden William Duff, Esq. of Hatton. A church hall was erected in 1893-94. The Free church, built soon after the Disruption, is a somewhat more ambitious structure. St Congan's Episcopal church (1862) is a good Early English building, consisting of porch, nave, a SW tower and spire 80 feet high, and chancel—the last erected as a memorial of Bishop Jolly. It has an organ and several fine stained windows.

Bleaching, dyeing, and the manufacture of carpets (started in 1760), of linen yarn (1767), and of woollen cloth, belong wholly or almost wholly to the past; but near the town there are a woollen manufactory and an agricultural engineering work. At the station are coal, lime, and manure stores, and a large granary. Cattle markets are held on the second and fourth Wednesdays of every month; and feeing markets on the Saturday before 27 May and the Saturday before 23 Nov. A burgh of barony since 1611, the town under the Burgh Police Act of 1892 is governed by a provost, 2 bailies, and 6 commissioners. There are burgh police and justice of peace courts; and sheriff small debt courts sit four times a year, in March, June, Sept., and Dec. Pop. of town (1821) 922, (1841) 1309, (1861) 1843, (1871) 2277, (1881) 2304, (1891) 2341, of whom 1322 were females. Houses (1891) inhabited 528, vacant 25.

Turriff or *Turra*, as the name is vulgarly pronounced, has been variously derived from the Gaelic *torr*, 'a mound or round hill,' and *tur*, 'a tower.' In support of the latter etymology, the writer in the *New Statistical* (1842) observes that 'in the memory of persons alive till lately the remains of towers were to be seen; and

those of one of them still exist in the gateway and vaults of an old and now almost ruinous building known by the name of "Castle Rainy." The Knights-Templars appear to have had an establishment at Turriff or property in its vicinity; and a spot of ground on the S still bears the name of Temple Brae. On 22 April 1589 James VI. passed a night in Turriff, which fifty years later made its first and last prominent figure in history. Early in 1639 the Marquis of Huntly assembled his forces first at Turriff, and afterwards at Kintore, whence he marched upon Aberdeen, which he took possession of in name of the King. The Marquis, being informed shortly after his arrival in Aberdeen that a meeting of Covenanters, who resided within his district, was to be held at Turriff on 14 Feb., resolved to disperse them. He therefore wrote letters to his chief dependants, requiring them to meet him at Turriff the same day, and bring with them no arms but swords and 'schottis' or pistols. One of these letters fell into the hands of the Earl of Montrose, then one of the chief Covenanting lords, who determined at all hazards to protect the meeting of his friends the Covenanters. In pursuance of this resolution he collected with great alacrity some of his best friends in Angus, and with his own and their dependants, to the number of about 800 men, he crossed the mountain range between Angus and Aberdeenshire, and took possession of Turriff on the morning of 14 Feb. When Huntly's party arrived during the course of the day, they were surprised at seeing the little churchyard of the village filled with armed men; and they were still more surprised to observe them levelling their hagbuts at them across the walls of the churchyard. Not knowing how to act in the absence of the Marquis, they retired to a place called the Broad Ford of Towie, about 2 miles S of the village, where they were soon joined by Huntly and his suite. After some consultation the Marquis paraded his men in order of battle along the NW side of the village in sight of Montrose, and dispersed his party, which amounted to 2000 men, without offering to attack Montrose, on the pretence that his commission of lieutenancy only authorised him to act on the defensive. This bloodless affair is known as the 'First Raid of Turray.' Three months later a body of the Covenanters, to the number of about 2000, having assembled at Turriff, the Gordons resolved instantly to attack them before they should be joined by other forces, which were expected to arrive before the 20th of May. Taking along with them four brass field-pieces from Strathbogie, the Gordons, to the number of 800 horse and foot, commenced their march on 13 May at ten o'clock at night, and reached Turriff next morning by daybreak by a road unknown to the sentinels of the Covenanting army. As soon as they approached the town the commander of the Gordons ordered the trumpets to be sounded and the drums to be beat, the noise of which was the first indication the Covenanters had of their arrival. Being thus surprised the latter had no time to make any preparations for defending themselves. They made, indeed, a brief resistance, but were soon dispersed by the fire from the field-pieces, leaving behind them the lairds of Echt and Skene, and a few others, who were taken prisoners. The loss on either side in killed and wounded was very trifling. The skirmish, which is called by writers of the period 'the Trott of Turray,' has 'some claim to commemoration, since in this distant village,' says Dr Hill Burton, 'the first blood was spilt in the great civil war. It was remembered, too, in the North, though the many turns in the mighty conflict drove it out of memory elsewhere, that it was on the side of the Cavaliers that the sword was first drawn.'

The parish contains also Auchterless station at its southern, and Plaidy station at its northern, extremity, the former being 4 miles SSE, and the latter 4½ N by E, of Turriff station. It is bounded N by King-Edward, E by Monquhitier, SE by Fyvie, S by Auchterless, and SW, W, and NW by Inverkeithny, Marnoch, and Forglan, in Banffshire. Its utmost length, from N by

W to S by E, is $7\frac{3}{4}$ miles; its breadth varies between $2\frac{3}{4}$ and $6\frac{1}{2}$ miles; and its area is $28\frac{1}{2}$ square miles or 18,483 $\frac{1}{2}$ acres, of which 102 $\frac{1}{2}$ are water. The beautiful river DEVERON curves $1\frac{1}{2}$ mile northward, $3\frac{1}{2}$ miles east-north-eastward, and $2\frac{1}{2}$ north-north-westward along the Marnoch and Forglan boundary; and IDOCH WATER, its affluent, after roughly tracing $1\frac{1}{2}$ mile of the Monquhitter boundary, flows $3\frac{3}{4}$ miles west-south-westward and north-westward through the interior. This stream is subject to freshets, and in the great flood of 1829 rose 11 feet above its ordinary level. The drainage thus mainly belongs to the basin of the Deveron, but is partly carried south-eastward by some little head-streams of the river YTHAN, which rise and run on the southern border. Perennial springs of excellent water are numerous; mineral springs of different qualities are in several places; a medicinal spring of some local note, called the Physic Well, is in the immediate vicinity of the town; and saints' or holy wells, long regarded with superstitious veneration, are in two or three places. Beside the Deveron the surface declines to less than 100 feet above sea-level; and N of Idoch Water it rises to 330 feet near Delgaty West Lodge, 450 at Hill of Wrae, and 614 at the Hill of Brackens, S to 392 at Hospital Wood and 537 at Hill-head of Ardmiddle. Thus Turriff, as compared with most other Aberdeenshire parishes, may be called hilly, and presents, on the whole, a beautiful appearance. Silurian rocks, chiefly greywacke, greywacke slate, and clay slate in numerous alternations, predominate, in about three-fourths of the entire area, all inward from the Deveron; the greywacke has been largely worked for buildings, drains, pavement flags, and road metal, and partially for roofing. Devonian rocks, partly conglomerates, partly dull red sandstones, often micaceous, predominate throughout the eastern district, and are quarried for the uses of house-masonry. The soil, on the low grounds adjacent to the streams, is argillaceous alluvium, and elsewhere is much of it sharp, light, and gravelly—fertile, and very early. Nearly two-thirds of the entire area are in tillage; one-seventh is under wood; and most of the rest of the parish is either pastoral or waste. Antiquities, other than those noticed under BALQUHOLLY and TOWIE-BARCLAY, are cairns, tumuli, and standing-stones, supposed to have been memorials of ancient battles with the Danes, the alleged site of the residence of a prince celebrated by Ossian, and the site of two pre-Reformation chapels. Mansions are ARDMIDDLE, BALQUHOLLY, DELGATY CASTLE, Glenesk, HATTON CASTLE, LAITHERS, and MUIRESK. Turriff is the seat of a presbytery in the synod of Aberdeen; the living is worth £367. Five public schools—Ardmiddle, Birkenhills, Fintray, Turriff, and Turriff female—with respective accommodation for 100, 110, 115, 482, and 185 children, had (1893) an average attendance of 65, 82, 108, 367, and 100, and grants of £64, 2s. 6d., £73, 6s., £112, 19s., £347, 16s. 7d., and £87, 16s. 10d. Pop. (1801) 2090, (1831) 2807, (1861) 3693, (1871) 4348, (1881) 4343, (1891) 4258.—*Ord. Surv.*, sh. 86, 1876.

The presbytery of Turriff comprises the *quoad civilia* parishes of Alvah, Auchterless, Drumblade, Forglan, Forgue, Fyvie, Gamrie, Inverkeithy, King-Edward, Monquhitter, and Turriff, the *quoad sacra* parishes of Gardenstown, Macduff, Millbrex, Newbyth, and Ythan-Wells, and the chapelry of Fyvie St Mary's. Pop. (1871) 30,446, (1881) 29,659, (1891) 28,453, of whom 9929 were communicants of the Church of Scotland in 1893.—The Free Church also has a presbytery of Turriff, with churches at Auchterless, Drumblade, Forglan, Forgue, Fyvie, Gamrie, Macduff, Monquhitter, and Turriff, and a preaching station at Newbyth, which nine churches together had 2084 communicants in 1894.

Tushielaw, a place, with an inn, in Ettrick parish, Selkirkshire, on the left bank of Ettrick Water, which here receives Tushielaw Burn, 15 miles SW of Selkirk. Its ruined tower was the stronghold of Adam Scott, the 'King of Thieves' or 'King of the Border,' who was beheaded by James V. on 27 July 1529, his head being set up over the prison at Edinburgh. Tradition, how-

ever, asserts that he was hanged on his own 'gallows tree,' an ancient ash.—*Ord. Surv.*, sh. 16, 1864.

Twatt, a post office in Birsay and Harray parish, Orkney, 12 miles N by E of Stromness.

Twechar, a village in Kirkintilloch parish, Dumbar-tonshire, on the Forth and Clyde Canal, 2 miles SW of Kilsyth. Pop. (1881) 671, (1891) 789.

Tweed, a large river in the SE of Scotland, draining also part of the N of Northumberland, and forming, for 16 miles of its course downward from a point midway between the mouth of Eden Water and Birgham, the boundary between England and Scotland. The remaining 2 miles of its course is entirely in England. It rises near the centre of the Southern Uplands, in the extreme S of the county of Peebles, at a small spring called Tweed's Well, 1500 feet above sea-level; and has from this a general northerly and north-easterly course till near the point where it is joined by Lyne Water, whence it flows generally eastward and north-eastward till it reaches the North Sea at Berwick, a distance, in a straight line from source to mouth, of 64 miles, or, following the windings of the river, of about 97 miles. The drainage basin covers an area of about 1870 square miles, and in this respect is surpassed in Scotland only by the Tay. The boundary of this basin commences close to Berwick, and passes north-westward along the heights between the hollows of Eye Water and Whitadder Water, till it reaches the Lammernuir Hills; follows this line of heights to a point E of Berthwick Castle; crosses thence to the Moorfoot Hills; strikes off north-westward between Leadburn and Lamancha, and round the hollow of the Lyne in the Pentland Hills, NW of West Linton; passes southward to the W of Dolphinton and Biggar; then along the line of heights between Lanarkshire and Peeblesshire; along the hills between Peeblesshire, Selkirkshire, and Roxburghshire on the N, and Dumfriesshire on the S; strikes through Roxburghshire round the head of Liddesdale, and gaining the Cheviot Hills at Peel Fell (1964 feet), follows their summits to Cheviot Hill (2676), and thence curves through England round the valley of the Till, and so back to the coast a short distance S of Tweedmouth. The basin thus comprehends five-sixths of Berwickshire, a small portion of Haddingtonshire, a sixth of Edinburghshire, almost the whole of Peeblesshire, the whole of Selkirkshire, the whole of Roxburghshire except a portion in the S along Liddesdale, and a considerable portion of the N of Northumberland. Of the whole course of the river itself, the first 36 miles are through Peeblesshire alone, and hence that county received its old name of Tweeddale. During this portion the stream traverses or bounds the parishes of Tweedsmuir, Drummelzier, Broughton, Stobo, Manor, Peebles, Innerleithen, and Traquair. The next 2 miles are along the boundary between Peeblesshire and Selkirkshire, the next 9 are through Selkirkshire, the next mile along the boundary between Selkirkshire and Roxburghshire, the next 5 miles through Roxburghshire, the next 10 $\frac{1}{2}$ along the boundary between Berwickshire and Roxburghshire, and the next 11 $\frac{1}{2}$ through Roxburghshire. During this portion the course is through or along the borders of the parishes of Yarrow, Stow, Selkirk, Galashiels, Melrose, St Boswells, Maxton, Merton, Makerstoun, Roxburgh, Kelso, Sprouston, Ednam, and Eccles. Except for 2 miles at the mouth, where it is entirely in Northumberland, the rest of the course is along the boundary between England and Scotland, and between the counties of Berwick and Northumberland. On the Scottish side the parishes are Eccles, Coldstream, Ladykirk, and Hutton.

The solitary spring of Tweed's Well, with its hill border to the E, S, and W, has its claim to be the true source of the river disputed by some of the other head-streams, in particular by the Corse or Cross Burn, which rises $\frac{1}{2}$ mile higher up, and joins the streamlet from the Well about 30 yards below the spring. It takes its name from a cross which stood on Corse Dod (1670 feet) on the E, by the side of the old road over the shoulder of the hill from Tweeddale to Annandale.

In the Peeblesshire portion of the course the principal tributaries from the W, NW, and N are Old, Glenbreck, Glenwhappen, Hallow, and Kingledoors Burns, Biggar Water (with Kilbucho Burn and Holms Water), Weston Burn, Lyne Water, Eddleston Water, Horsburgh Burn, Leithen Water, Walker Burn, and Gathie Burn. From the E, SE, and S come Cor Water, Glencraigie Burn, Fingland Burn, Hawkshaw Burn, Fruid Water, Menzion Burn, Talla Water, Westhope Burn, Hearthstane Burn, Polmood Burn, Stanhope Burn, Drummelzier Burn, Manor Water, Hundeshope Burn, Kirk Burn, Quair Water, Flora Burn, and Bold Burn. In the course through Selkirk, Berwick, and Roxburgh, it receives from the N Cadon Water, Gala Water, Allan Water, Leader Water, and Eden Water; and from the S Ettrick Water (with the Yarrow), Bowden Burn, and the Teviot (with Ale Water, Jed Water, Oxnam Water, and Kale Water). After the river finally quits Roxburghshire, from the Berwickshire side come the Leet Water and the combined stream of the Blackadder and the Whitadder; and on the English side the principal stream is the Till. All along the course there are a very large number of smaller streams. From the influx of Biggar Water there is a continuous series of railway lines to the mouth of the river at Tweedmouth, sometimes on the one side of the stream and sometimes on the other, but mostly, especially in the lower portion, on the S bank. From near Biggar to Peebles the line is a portion of the Caledonian system; from Peebles to Maxwelllough near Kelso, different sections of the North British system; and from Maxwelllough to Tweedmouth, a section of the North-Eastern, an English company. A good line of road also follows the course of the stream, generally at no great distance, all the way from Berwick to the source at Tweedshaws, whence it passes over the ridge into Dumfriesshire, and down Annandale. There are very old bridges at Peebles and Berwick, but till a comparatively recent period there was not a bridge anywhere between. Now there are within this distance a private suspension bridge at Kingsmeadow, a fine modern girder bridge near Innerleithen, a stone bridge at Yair, a stone bridge and a railway viaduct near the mouth of the Ettrick, a good stone bridge and a railway viaduct near Darnick, a suspension bridge for foot-passengers near Melrose, a stone bridge and a railway viaduct near the mouth of the Leader, a private suspension bridge near Dryburgh, an iron suspension bridge and a good stone bridge at the lower end of Kelso, a stone bridge near Coldstream, a suspension bridge for carriage traffic near Tweedhill, and a very large railway viaduct at Berwick.

Some of the head-streams of the Tweed, Annan, and Clyde rise within $\frac{1}{2}$ mile of one another; and hence the old rhyme that says—

‘Annan, Tweed, and Clyde
A’ rise out o’ ae hill side.’

The Tweed and Clyde flow in parallel courses, and within about 7 miles of each other, till near Biggar they finally take their separate ways E and W. They are much on the same level, and it would not be a very difficult matter to divert the upper Clyde waters into the Tweed by the cutting of a very short channel; and even were good care not taken of the banks of the Clyde, it is possible that the river might perform the work for itself. Tradition says that before Glasgow had acquired commercial importance, a project was conceived of actually making this cutting, in order so to increase the volume of the Tweed as to make it navigable for a considerable distance upwards from the mouth. Farther down, near Dolphinton, a small stream divides so as to send a portion of its waters to Medwin Water and so to the Clyde; while the other portion passes to Tarth Water, and so by Lyne Water to the Tweed. At some parts of the river’s own course there are reaches where lakes of considerable size seem to have at one time existed, and there are also traces of old courses, which were occupied probably in pre-glacial times. One well-marked example is above Neidpath Castle near Peebles, where there is the basin of an old lake extend-

ing upwards from the narrow glen at Neidpath. It had existed before the narrow neck of rock there was cut through, and at this time the course of the river had been first southward by the line of Manor Water to Cademuir, and thence eastward through the narrow hollow NW of Hundeshope, and then south-eastward by the line of the lower part of Hundeshope Burn to the present course of the river near Whitehaugh. Of the 1250 feet of fall along the course of the Tweed, from the source to the sea, over 700 are accomplished in the 26 miles between Tweed’s Well and Peebles; and as only 50 remain to be distributed over the other 70 miles of flow, there are, as might be expected, deep still pools and long reaches of water, with hardly any perceptible current, with rapids of no great length or steepness coming between. In consequence of the gravel-beds at these rapids, it is, however, navigable—and that for craft of very small size—for only a short distance from the mouth, there being sufficient depth of water at high tide to float a vessel to New Water Ford, 6 miles above Berwick; while the tide flows 10 miles up, to about Norham Castle.

Though otherwise of little commercial importance, the Tweed and its tributaries are not much surpassed for salmon, grilse, and sea-trout fishing by any river in Scotland, ‘and although it is beyond a doubt that salmon were more numerous in its waters some 60 years ago than now, a large stock of fish generally find their way each season into the respective casts, and excellent sport is the rule.’ There are no fewer than 316 named salmon casts, of which the 55 from the Inch 3 miles above Peebles to Kame-knowe-end near Elibank are open to the public. The others are preserved, but fishing may sometimes be had by arrangement with the tenants. The excellence of the spawning ground, both in the Tweed itself and in all its tributaries, makes the river very prolific; but to such an extent did over-fishing prevail in the first half of the 19th century, that between 1808 and 1856 the number of fish captured in one year had fallen off very considerably. Special Acts of Parliament were obtained in 1857 and 1859 for the prohibition of fixed nets for 9 miles along the coast on both sides of the mouth, and for the regulation of the fishing on the river itself, the result being that the number of salmon captured yearly is in excess of the annual returns of the beginning of the century. The upland districts are now so well drained that in dry summers the river is always low and angling poor, and of late years the fungus, *Saprolegnia ferax*, has made severe ravages among the fish; though a large amount of scientific attention has been directed to the investigation of the disease, all efforts to discover its cause or find a cure have hitherto been in vain. The harm that is being done may be estimated from the fact that in the years 1891 and 1892, no fewer than 8734 diseased salmon, grilse, and sea-trout were removed from the river. The rental is over £18,000 a year. The rod season extends from 1 Feb. to 30 Nov. Trout-fishing is excellent all along the river, which for this purpose is open to the public from the source to the junction of Leader Water, from Kelso to Carham, and nearly the whole way from Wark to Tweedmouth. The fish vary from 3 pounds downwards, but the majority of them are under one pound.

All along the vale there are a number of towns and thriving villages, of which the chief are Peebles, Innerleithen, Walkerburn, Galashiels, Darnick, Melrose, Newtown, Lessudden, Maxton, Rutherford, Roxburgh, Kelso, Sprouston, Birgham, and Coldstream; and on the English side Carham, Wark, Cornhill, and Norham: while at the mouth are Berwick and Tweedmouth. There are also a large number of old castles and modern mansions, of which the chief are Oliver Castle, Tennis or Thane’s Castle, Dalwick House, Stobo Castle, Easter Dalwick, Easter Hawprey, Lyne, Neidpath Castle, Rosetta, Venlaw House, Kerfield, Hayston, Horsburgh Tower, Kailzie House, Cardrona, Glenormiston, Grierson Tower, Traquair, Elibank, Ashiestel, Fernielee, Sunderland Hall, Abbotsford, Pavilion, Darnick Tower,

Littledean Tower, Gattonside House, Allery House, Drygrange, Bemersyde, Merton House, Smailholm Tower, Makerstoun House, Floors Castle, Hendersyde Park, Ednam House, Pinnacle Hill, Lennel House, Tillmouth Castle, Twisel Castle, Milnegraden, Ladykirk House, Norham Castle, Swinton House, Tweedhill, and Paxton House. Nor do these exhaust the old keeps—many of them with historic names—that studded the whole valley 'from Berwick to the Bield,' and frowned defiance across the Border at the line of strengths on the English side. These peels are a peculiar feature of the whole line of the river as well as of the courses of its tributaries, marking 'barbarous times when Border raids were in continual activity, and when no one on either side of the marches, or debatable land, could lay down his head to sleep at night without the chance of having to stand to his defence, or perhaps to mount and ride ere morning. Intended for the general advantage and preservation of all the inhabitants of the valley, they were built alternately on both sides of the river, and in a continued series, one in view of another; so that a fire kindled on the top of any one of them was immediately responded to, in the same way, by all the others in succession; the smoke giving the signal by day and the flame by night—thus spreading the alarm through a whole country of seventy miles in extent (in the provincial phrase, from "Berwick to the Bield"), and to a breadth of not less than 50 miles, carrying alarm into the uppermost parts of every tributary glen. Would that we could be inspired with the fancy of our own immortal Sir Walter, that we might for only one moment imagine the sudden upstirring in this way of the wild and warlike population of so great an extent of country, during the days of Border contest! What a shouting of men and neighing of horses—what a hurried donning of back and breast-pieces and morions—what a jingling of bridles and saddling of steeds—what a buckling on of swords and grasping of lances, and how the woods and the steep faces of the hills must have echoed to the gallop of the various little parties, hastening to unite themselves together. Then came the assault of the invading foe—the crash of combat—the shouts of triumph and the shrieks of dying men—all full of the most romantic and picturesque suggestions. Nay, if we could only fancy the laird of any one of these little fortalices, after having been warned by his provident dame, by the usual hint of a covered dish full of steel spurs set before him, that there was no more meat in the larder—if we could only imagine him and his followers getting hurriedly to boot and saddle, to ride across the Border on a foray into England to harry some district of its beeves, we should conjure up a picture full of the most romantic circumstances and stirring interest.' The whole district is full of historic associations. Berwick, Norham, Coldstream, Birgham, Kelso, Dryburgh, Melrose—the names need but to be mentioned; and more, they have had their poet in the great magician of the north, whose ambition was to be a Border laird, and to found a new branch of the great Border family, and whose name and genius must ever be associated with Ashiestel and Abbotsford; and for much of whose most congenial work this Border land provided both scene and material. But while, looking back upon the course of the Tweed, 'no one who has seen it, and who knows the land through which the stream flows, can be indifferent to the memories of ancient towers and olden names famous in Scottish story, which it bears along, of holy though broken shrines which keep sacred for us the illustrious dead, Bruce, and Douglas, and Walter Scott, or fail to feel the soothing power of that pathetic peace which broods over ancient battlefields; yet 'that which most attracts the stranger, which unites the natives of the Borders themselves most closely, most deeply, which binds in one the people of Teviot and Ettrick, of Yarrow and of Tweed, is the poetry, both old and new, the ballad and song of the *Minstrelsy*, and such strains as "The Flowers of the Forest" and "Lucy's Flittin'." This touches the old heroic life that was once lived in the Border land,

our sympathy with the griefs, the loves, the sorrows, the fates, and the fortunes of the men and the women who dwelt long ago in the ancient Border homesteads, whose ruins now speak to us on a Lowland brae with a weird old-world suggestion and an inexpressible pathos. For true it is that no poetry is less indebted to foreign inspiration than that of the Borders. It is purely autochthonal. It has sprung from the soil, from native deeds and story, from the very heart of the people through successive generations. Border men did the deeds and border maidens felt the love which the Border minstrels sung. The ballad and the song truly reflect the whole character of the people in its freshness, vigour, old roughness, its dark shades and its bright sides, its heroism and its tenderness. In the early dawn of Border story, in the thirteenth century, there are two dim personages who seem to prefigure the two main lines of subsequent Border activity—intellectual and imaginative.' The one is 'the wondrous wizard,' Michael Scott, whose scientific bent was but the prototype of that which animated Mungo Park, Sir David Brewster, and Mrs Somerville; the other Thomas the Rhymer of Ercildoune, forerunner of those who sang of the *Donie Dens o' Yarrow*, *The Bush aboon Traquair*, and *The Broom o' the Cowdenknowes*, and on to the mightier minstrelsy of Thomson, Hogg, Leyden, and Scott. The older bards, according to the late Professor Veitch, have caught and reproduced in their verse the pure characteristics of Tweedside. Their poetry 'breathes a sweet pastoral melody. There is a passionate fondness dashed with sweetness and regret—a mingling of love and sorrow, hopefulness and despair. This curious blending of opposite feelings flows all through the songs of the Tweed, and seems to reflect the familiar contrast in the scenery—the sparkling gleam of the morning and noon gradually passing into the pathetic shade of the gloamin' of the river itself.' From Tweedside Thomson must have drawn the then daring idea that scenery was an object of poetic interest in itself. From the 'mysterious belt of grey clear light—the weather gleam—that runs at nightfall across the wavy lines of the Border hills,' Hogg drew that charm and inspiration of *faerie* and fairyland that enabled him in *Kilmeny* to reproduce the best and purest part of the old rude belief in the constant presence of the invisible and supernatural around us; while Leyden first

'Saw with strange delight the snow-clouds form,

When Rubenslaw conceives the mountain stores;

and then by showing us 'the beauty, the gentle beauty and not less the power, the grandeur, to be found in the Border scenery,' opened 'the eyes of dwellers on the Border to the glory that is at their own doors.' And the late Professor Veitch himself may be cited as an example of the continued song-compelling power of the river.

In picturesqueness of scenery the Tweed is inferior to the Tay or any of its great tributaries, as well as to the Clyde. For the first 15 miles of its course, down nearly to the junction of Biggar Water, the valley is narrow, bare, and solitary, but the soft green pastoral heights by which it is bounded give it a distinct character of its own. The river flows 'down over the bluish grey-wacke rock, and for miles amid broken, isolated, half-smoothed blocks, severed from its bed. Here and there its banks have an abrupt picturesqueness, but as a rule its flow is a rippling rapid movement spreading out in silvery sheen, by the foot of the confining hill, or amid the narrow haughs by the way; occasionally a knove of rock juts out from the bank, and then the river swings round the obstruction into a restful pool, again to pass into the rapid ripple of its falling soft-sounding stream; still bare of tree and bush until at Polmood it becomes scantily fringed with alders and birches, remains of the old forest. The haughs here widen considerably, and soothe the eye with soft green pasture. Ever and anon a burn from its mountain glen joins and enriches the river; and thus is suggested the reserve of beauty and solitude in the valley of the Tweed, for the glen leads the eye upwards, between hills meeting hills

from the opposite sides in a wonderful harmony and symmetry of fold, far away to the half-seen, dim, massive heights which form the broad and lofty background of the valley and feed the springs of the tributary waters. . . . Those long, rounded, far-spreading heights seldom visited, spaces of dreamy solitude and soul-subduing pathos, are never at any season of the year without their charm. Early June decks them with a tender green, in which are set the yellow violet and the rock rose, and even the cloudberry lifts its snow-white blossom from the heart of the black peat-moss. Midsummer deepens and enriches the bloom, and brings the bracken in the lush green of the year. In early August the braes and moors are touched and brightened with the two kinds of the heatherbell ere they gradually flush deep in large breaks of the common purple heather. Autumn, late autumn, throws the fading beauty of tender colour over the heather bloom; and the bent of the Moorland, "the bent sae brown" of the old ballads, that knew and felt many a blood-stain in long-gone foray and feud,—that bent amid which, in the very dawn of Border legend and poetry, the Queen of Faery took her leave of Thomas of Erildoune—throws in October days its tresses free to the wind with a wondrous grace, touching the heart as with the hushed life of the old story. And in winter the snow wraps those hills in a robe so meet that their statuesque outlines are seen and followed in their entirety and in their minute details as at no other time—standing against the heavens in the clear relief of forms new, as it were, from the sculptor's hand. From Broughton downwards the valley is much wider, the bottom being occupied by large tracts of fertile haughland, and though the bounding lines of heights continue, they are farther from the river. Owing to the windings of the stream, the heights seem at many points as if almost meeting and enclosing rich and fertile vales, as at Melrose, where the whole hollow seems from some points of view to be entirely shut in by hills. Many of the haughs here and elsewhere have rich orchards. 'After the first mile or two,' says Dorothy Wordsworth, in describing the course of the river from Peebles to Melrose in the beginning of the 19th century, 'our road was seldom far from the river which flowed in gentleness, though perhaps never silent; the hills on either side high and sometimes stony, but excellent pasturage for sheep. In some parts the vale was wholly of this pastoral character; in others we saw extensive tracts of corn ground, even spreading along whole hill sides and without visible fences, which is dreary in a flat country; but there is no dreariness on the banks of the Tweed—the hills, whether smooth or stony, uncultivated or covered with ripe corn, had the same pensive softness. In one very sweet part of the vale a gate crossed the road, which was opened by an old woman who lived in a cottage close to it; I said to her, "You live in a very pretty place." "Yes," she replied, "the water of Tweed is a bonny water." The lines of the hills are flowing and beautiful, the reaches of the vale long; in some places appear the remains of a forest; in others you will see as lovely a combination of forms as any traveller who goes in search of the picturesque need desire, and yet perhaps without a single tree; or at least if trees there are they shall be very few, and he shall not care whether they are there or not.' The constant character of the gently varying scenes 'was that of tender pensiveness; no bursting torrents when we were there, but the murmuring of the river was heard distinctly, often blended with the bleating of sheep. . . . The transitions of this vale were all gentle except one, a scene of which a gentleman's house was the centre, standing low in the vale, the hills above it covered with gloomy fir plantations, and the appearance of the house itself was gloomy. There was an allegorical air—a person fond of Spenser will understand me—in this uncheerful spot single in such a country,

"The house was hearsed about with a black wood."

The absence of wood and the constantly pastoral ap-

pearance of the hills is not now so marked, for, from the point where the valley widens out, downwards, the skirting hills are fringed or covered with thriving plantations, mostly formed since the beginning of the century. At some points, particularly about Neidpath and Floors Castle, these woods have been laid out with taste, but at other places the scenery has often suffered from the too regular and methodical nature of the planting. The bed of the river is almost everywhere composed of basaltic and sandstone rocks, or of pebbles of these imbedded in clear sharp sand, and the water is generally bright and clear.

See also Sir Thomas Dick Lauder's *Scottish Rivers* (Edinb. 1874); J. Russell's *Haigs of Bemersyde* (Edinb. 1881); Professor Veitch's *Border History and Poetry* (Glasg. 1878); the same author's *River Tweed* in volume issued to subscribers to the Royal Association for the Promotion of Fine Arts in Scotland (Edinb. 1884); Borrow's *Lavengro*; and, for sketches of the scenery along the upper part of the river, Black's *Strange Adventures of a Phaeton*.

Tweeddale. See TWEED, PEEBLESSHIRE, and YESTER.

Tweedsmuir, a large parish of SW Peeblesshire, containing, close to its northern extremity, the CROOK INN, $6\frac{1}{2}$ miles S of Broughton station, $16\frac{1}{2}$ N by E of Moffat, 36 SSW of Edinburgh, and 12 SSE of Biggar, under which there is a post office of Rachan Mill. It is bounded NW and NE by Drummelzier, E by Yarrow in Selkirkshire, SE and S by Moffat in Dumfriesshire, and SW and W by Crawford in Lanarkshire. Its utmost length, from N to S, is $8\frac{1}{2}$ miles; its utmost breadth, from E to W, is 8 miles; and its area is 51 square miles or 32,612 $\frac{1}{2}$ acres, of which 144 are water. The TWEED, here a mountain stream, rises in Tweed's Well at an altitude of 1500 feet above sea-level, and runs $10\frac{1}{2}$ miles north-north-eastward, until, 3 furlongs N by E of the Crook Inn, it passes off into Drummelzier. It thus divides Tweedsmuir into two unequal portions, that to the E being very much larger than that to the W. During this course it is joined by twenty-three rivulets, which all have their source in Tweedsmuir, and the largest of which are FRUID WATER, rising at 2500 feet, and running 8 miles north-north-westward; TALLA WATER, rising at 2300 feet, running $6\frac{1}{2}$ miles north-westward, and itself receiving GAMESHOPE Burn; and HEARTHSTONE or HARESTANE Burn, rising at 2000 feet, and running $4\frac{1}{2}$ miles north-westward. Another tributary, Polmoord Burn, rises in Drummelzier at 2250 feet, and over the last $2\frac{3}{4}$ miles of its 4 miles' west-north-westerly course traces part of the Drummelzier boundary. The highroad from Edinburgh to Moffat and Dumfries runs $9\frac{1}{2}$ miles up the parish close to the W bank of the Tweed, and just at the Lanarkshire boundary crosses from Tweeddale into Annandale by a 'col' 1334 feet high. In the extreme N, where the Tweed passes off into Drummelzier, the surface declines to 743 feet above the sea: and chief elevations to the W of the river, as one goes up the valley, are *Nether Oliver Dod (1673 feet), *White Knowe Head (1707), *Culter Clench Shank (1801), *Black Dod (1797), and *CLYDE LAW (1789); to the E, Great Knock (2267), *BROAD LAW (2754), Middle Dod (2179), Garlavin Hill (2383), Molls Clench Dod (2571), *Lochraig Hill (2625), and *HARTELL (2651), where asterisks mark those summits that culminate on the confines of the parish. 'It will be seen from your list of our mountains,' writes the Rev. John Dick, M.A., who has been minister from 1858, 'that Tweedsmuir embraces some of the highest summits in the Southern Highlands, and these are pierced by numerous deep glens of various scenery, some wildly moorland, some quietly pastoral, some ruggedly broken, and all bearing their contribution to the "siller Tweed." The whole parish is mountainous, but the upper vale of the Tweed towards Tweedshaws is comparatively bare and featureless, though even here there are often, especially up the tributary burns, close scenes of simple beauty which charm and surprise the solitary angler or pedestrian. Lower down the landscape is much more impressive in outline and more

picturesquely diversified in detail. Near the village, which consists of only a few detached cottages, the road to St Mary's Loch crosses the old stone bridge of one arch, under which the confined Tweed, tumbling through a rocky chasm, plunges into a deep linn well known to angler and artist. To the left of the river, high up on the hill, OLIVER HOUSE, the seat of T. T. Stodart, Esq., a resident landowner, looks out from its ancestral trees upon one of the finest views in Peeblesshire. Right below, on its prominent knoll between Tweed and Talla, stands the parish church, embowered in birch and elm and Scotch fir, up through which rises the taper spire, whose red freestone tints contrast harmoniously with the dark hues of the pine. Beyond the church, and flanking the right bank of the Talla, is the rounded form of Cockland, with its gentle slopes and green pastures; behind and above which towers the huge bulk of Broadlaw, one of the highest ridges in the south of Scotland. Between Cockland and Quarter Hill the beautiful vale of Talla stretches away up south-south-eastward until lost to the eye in the recesses of the lofty mountain ranges which form the horizon in that direction. The head of Talla Glen is a deep hollow or den, hemmed in on the one side by the steep spurs of the Broadlaw (otherwise called "Talla Banks"), and on the other by the beetling precipices and cleft chasms of the Garilet, the immemorial haunt of the hunting falcon; while from the heights behind the shepherd's house, through a formidable fissure, Old Talla flows from linn to linn in a succession of striking falls (hence the name of the spot, Talla Linnfoot), 4 miles SE of the church. From the little handrail bridge above the linn the scene is grand and impressive, resembling in its general features the Devil's Beef-tub, the head of Black's Hope, and the gorge of the Grey Mare's Tail. Here the Talla is joined by Gameshope Burn, a thoroughly Highland stream, which issues from a little black lochan in the wilds above, churns its way among opposing rocks down the steep descent of a dark and narrow gorge, whose sides "ascend like lofty wa's," and in whose clefts and carries the snow often lies till well on into the summer. This is Gameshope, associated with Covenanting memories, famous for ferns and trout, but most notable for its scenery, which, for stern and rugged grandeur, is not surpassed by any similar scene south of the Forth and Clyde, and may bear comparison with the more widely celebrated Glengole in Perthshire. The predominant rocks are greywacke and greywacke slate. The soil of the arable tracts is mostly a light loam, and that on many parts of the hills is a strong thick mould, formed of earth and moss. Less than 300 acres are in tillage; but, except for the cost of reclamation, much of the lower slopes of the hills might easily be brought under the plough. Large flocks of sheep, most of them Cheviots, are pastured; and hay-meadows and peat fuel are plentiful. Hawkshaw Castle, an ancient seat of the Porteous family, stood on the left side of Hawkshaw Burn, 5 miles SSW of the Crook Inn; and at the source of the Tweed is a spot called Tweeds Cross, from its having been the site of a pre-Reformation cross. Here in Feb. 1831 the guard and the driver of the Edinburgh mail coach perished in a gallant attempt to carry the letter bags through the drifted snow—an episode woven by Dr John Brown into his essay on *The Enterkin*. Other antiquities are noticed separately under FRUID WATER, GIANT'S STONE, and OLIVER CASTLE. Tweedsmuir is in the presbytery of Peebles and the synod of Lothian and Tweeddale; the living is worth £246. The parish church, $\frac{1}{2}$ mile SSW of the Crook Inn, on the peninsula between Talla Water and the Tweed, crowns a knoll, called Quarter Knowe, by some supposed to be a tumulus, but really of alluvial formation. The present building, successor to one of 1643, was erected in 1874-75 at a cost of £1930, and contains 180 sittings. A Romanesque structure, it is in beautiful keeping with the surrounding scenery, and forms a commanding object from every point of approach. An old headstone in the graveyard bears the inscription—'Here lyes John Hunter, martyr;

who was cruelly murdered at Corehead by Col. James Douglas and his Party for his adherence to the word of God and Scotland's covenanted work of Reformation, 1685.' Pop. (1801) 277, (1831) 288, (1861) 196, (1871) 190, (1881) 215, (1891) 207.—*Ord. Surv.*, sh. 16, 1864.

Twynholm, a post-office village and a parish of S. Kirkcudbrightshire. The village is pleasantly situated in a little glen, 3 miles NNW of Kirkcudbright and 2 SSW of Tariff station, this being $6\frac{1}{2}$ miles SW of the post-town, Castle-Douglas, and has a woollen mill, where tweeds, blankets, etc., are manufactured.

The parish, which comprises the ancient parishes of Twynholm and KIRKCHRIST, united about 1654, is bounded N by Balmaghie, E by Tongland, SE by the broadening Dee and Kirkcudbright Bay (dividing it from Kirkcudbright), S by Borgue, and W by Borgue and Girthon. Its utmost length, from N by W to S by E, is 9 miles; its utmost width is $2\frac{1}{2}$ miles; and its area is $16\frac{1}{2}$ square miles or 10,683 $\frac{1}{2}$ acres, of which 95 $\frac{1}{2}$ are water and 103 $\frac{1}{2}$ foreshore. Culcaigrie Loch ($2 \times \frac{1}{4}$ furl.; 375 feet) lies on the boundary with Tongland, Loch Whinyeon ($4\frac{1}{2} \times 4\frac{1}{2}$ furl.; 725 feet) on that with Girthon; and the latter sends off Glengap Burn, a head-stream of Tariff Water, which, lower down, winds 2 miles south-south-eastward along the Tongland border, till it falls, near Compstone House, into the Dee. The DEE itself, here broadening into its tidal estuary, KIRKCUDBRIGHT BAY, curves $3\frac{1}{2}$ miles south-south-westward along all the south-eastern border, past Kirkcudbright town, to a point nearly opposite the southern extremity of St Mary's Isle. Chief elevations, from S to N, are Kirkeoch Hill (292 feet), Fuffock Hill (1050), and Bengray (1203) on the Girthon boundary. The general surface of the parish lies so comparatively high, that, if regarded in the aggregate, or as seen from a distance, it might be pronounced a tableland or elevated plain. But the parts of it fringing the Dee and Tariff Water comprise some haugh-ground; the southern and central parts are rolled into knolls and hillocks, with intervening vales and hollows; and only the northern parts rise into high hills, of pastoral character, and incapable of cultivation. Silurian rocks, comprising greywacke, greywacke slate, and clay slate, predominate; and large granite boulders have now been nearly all removed. The soil of the arable lands is variously clay, sand, gravel, and moss—mostly light, dry, friable, and fertile. Nearly two-thirds of the entire area are capable of tillage; rather more than 300 acres are under wood; and the rest of the land is chiefly hill pasture. Antiquities are a number of Caledonian forts, the ruins of Compstone Castle, the site of an old castle, and probably of a nunnery at Nunton, and a circular mote near the parish church. Mansions, noticed separately, are BARWHINNOC and COMPOSTONE. Twynholm is in the presbytery of Kirkcudbright and the synod of Galloway; the living is worth £440. The parish church, at the village, is a neat Gothic edifice of 1818, with aisle, bell-cote, and 410 sittings. In the churchyard, which is surrounded by trees, is the grave of Andrew M'Robert, who, with four other Covenanters, was shot by Grierson of Lag on Kirkconnell Moor in TONGLAND parish. The public school, built in 1876-77, with accommodation for 184 children, had (1893) an average attendance of 121, and a grant of £117, 2s. Pop. (1861) 815, (1871) 717, (1881) 681, (1891) 694.—*Ord. Surv.*, sh. 5, 1857.

Tynabruaich. See TIGHNABRUAICH.

Tyndrum (Gael. *tigh-an-droma*, 'house of the ridge'), a small post-office village in Killybeg parish, W Perthshire, at the head of Strathfillan, within 7 furlongs of the Argyllshire border and 35 miles SE of Ballachulish, whilst its station on the Callander and Oban railway (1873-80) is $36\frac{1}{2}$ miles E by N of Oban and $17\frac{1}{2}$ W by N of Killin station. Standing almost equidistant between this station and that on the West Highland railway (opened 1894), it is 700 feet above sea-level, has a hotel, and is described by the Queen, under date 22 Sept. 1873, as 'a wild, picturesque, and desolate place in a sort of wild glen with green hills rising around. . . . There are a few straggling houses and a nice hotel at

the station.' See CLIFTON and DALRY.—*Ord. Sur.*, sh. 46, 1872.

Tyne, a river of Lothian, originating in Edinburghshire, but belonging almost wholly to Haddingtonshire, and draining the larger part of its area. The stream—with the characteristic unsettledness of the nomenclature of Haddingtonshire streams—gathers many head-waters, and runs a large part of its course before its name ceases to be capricious and disputed. One early rivulet called the Tyne issues from a lochlet in the extreme E of Borthwick parish, and has a run of 7 miles northward before it enters Haddingtonshire. Over this distance it divides Borthwick on the W from Crichton on the E, sweeps past the village of Ford, and cuts Cranston into nearly equal parts; and after entering Haddingtonshire it describes the segment of a circle from a northerly to an easterly direction, over a distance of between 4 and 5 miles, through the parishes of Ormiston and Pencaitland, to a confluence $\frac{1}{2}$ mile E of Easter Pencaitland, whence all debate ceases respecting the application of the name. Another rivulet, which claims to be the infant Tyne, is itself a collection of four or five head-streams, which rise in Borthwick, in Fala, in Soutra, and in the extreme S of Humbie, and, after courses of from 4 to $6\frac{1}{2}$ miles, attain a general confluence $\frac{3}{4}$ mile below Humbie church; and after this confluence the stream proceeds 3 miles northward to join the competing head-rivulet of the Tyne—less than it in length of run, but considerably greater in volume of water. The Tyne, now of quite a fixed name, flows north-eastward, nearly across the centre of the lowlands of the county, to the sea at Tynninghame, $2\frac{1}{2}$ miles NW of Dunbar, performing a run of 16 miles, or 28 if measured from its remotest source. Till it enters Haddington parish it moves alternately on and near the boundaries between Pencaitland and Gladsimir on the left and Haddington on the right; and it afterwards moves principally in the interior of Haddington, Prestonkirk, and Whitekirk. Its banks are studded with numerous and beautiful mansions, with the capital of the county, and with the villages of Pencaitland, Nisbet, Samuelston, Abbey, East Linton, Prestonkirk, and Tynninghame. Its current is placid, in many places dull and sluggish; but near East Linton it forms a kind of rapid, and tumbles over some broken rocks. Its whole course is through a rich agricultural country, abounding in all the embellishments of culture, but quite devoid of bold or striking features. Proportionately to its length of run it is a small stream, and viewed intrinsically it scarcely claims to be more than a rivulet; but it is subject to inundations of such suddenness and magnitude, as, if not restrained by embankments, would work enormous havoc. (See HADDINGTON.) The tide affects it over a distance of 2 miles, and expands at high-water into an extensive lake on what are called the Salt-Greens, in front of Tynninghame House. The river is of much value for driving corn-mills. Its trout fishing is often very good; and salmon and sea-trout also ascend it.—*Ord. Sur.*, shs. 32, 33, 1857-63. See Sir T. Dick Lauder's *Scottish Rivers* (Edinb. 1874).

Tyne, an important English river, two of whose head-streams rise in the S of Roxburghshire, on the eastern slope of CARLIN-TOOTH, near the source of Jed Water, and run $5\frac{1}{2}$ furlongs eastward through Southdean parish to the Border.

Tynecastle, an Edinburgh district, on the road from the Haymarket to Gorgie, near the Dalry Cemetery, and 2 miles SW of the General Post Office. It is the seat of the Albert Works, directed by Mr Wm. Scott Morton, an architect of special skill in decorative work. Here, besides stained glass, painted tiles, art furniture, etc., is manufactured the beautiful 'Tynecastle tapestry,' which Mr Scott Morton invented, and which consists of coarse paper-backed canvas, dyed and decorated in a great variety of ways to suit for walls, ceilings, or friezes. A chapel of ease to St Michael's *quoad sacra* parish church was erected in 1891-92.

Tynehead, a post office and a station in Crichton

parish, Edinburghshire, on the Waverley route of the North British railway, 16 miles SE of Edinburgh.

Tynninghame, an ancient parish of Haddingtonshire, annexed to WHITEKIRK since 1761, and containing Tynninghame village, 2 miles NE of Prestonkirk or East Linton, under which it has a post office. The name, which means 'the hamlet on the Tyne,' graphically describes the position of the village, 800 yards from the northern margin of the Tyne, on a beautiful piece of ground which gently slopes to the river's edge. The original church was founded by Bathere the anchorite, better known as St Baldred of the Bass, who died in 756, when, according to Bellenden, 'the parishioners of Auldham, Tynninghame, and Preston contended whilk of them should have his body to decorate their kirk; but on the morrow they fand, by miracle of God, three beirs with three bodies, na thing discrepant frae others in quantity, colour, nor raiment. And so the body of this haly man lies be miracle in all the three kirks.' In 941, according to Hoveden and the *Chronica de Mailros*, Anlaf the Dane spoiled the church of St Baldred, and burned the village of Tynninghame; and in 1094 a charter of Duncan granted to St Cuthbert, &c., to the church of Durham, Tynninghame and five other places in Haddingtonshire, three of which—Aldham, Scougal, and Knowes—are in the present united parish. The church of Tynninghame enjoyed of old the privilege of sanctuary. Patrick de Leuchars, who was rector of it in the reign of David II., rose to be Bishop of Brechin and chancellor of Scotland; and George Brown, who was rector in the reign of James III., was raised by the party who overthrew that monarch to be Bishop of Dunkeld, and joined them in hunting the king to death on the field of Sauchieburn. The manor of Tynninghame, with the patronage of the church, anciently belonged to the Bishops of St Andrews, and was included in their regality lying on the S side of the Forth. In 1553, it appears to have been conferred by Archbishop Hamilton on St Mary's College in St Andrews; but in 1565 a complaint was made by the parishioners to the General Assembly, that though they paid their tithes to the college, they had as yet received from it the benefit neither of preaching nor of administration of sacraments. The manor, held for a time under the archbishop by the Earl of Haddington, in 1628 was obtained by him in chartered right under the Great Seal; and it thence became the home-domain, the beautiful seat, gradually the richly embellished forest and park-ground of the noble family. The estate is famed in the E of Scotland for the extent and singular beauty of its woods and its holly-hedges. More than 800 acres wave with trees, chiefly of the various hardwood species, and arranged in the most tasteful forms of forest. In 1705, Thomas, sixth Earl of Haddington, instigated by his countess, the sister of the first Earl of Hopetoun, commenced planting operations on a great scale; and he must, in reference to their date and their influence, and to the efforts which he used to provoke imitations of his example, be regarded as the originator of the thousands of fine expanses of modern plantation which now so generally beautify Scotland. His first exploit was to plant Binning Wood, a forest of 400 acres, over the whole face of what was then a moorish common called Tynninghame Moor. The trees were arranged in thirteen rides or avenues, converging at four different points in an open glade. The Earl next drew sheltering belts along the enclosures of fields; and then—boldly putting to the test a received opinion, that no trees would grow near the shore—he planted some expanses of sandy ground upon the beach. Finding that his trees grew and were thriving, he determined to 'fight no more with the cultivation of bad land, but to plant it all.' Thus arose a forest which while the earliest modern one in Scotland, is excelled by none in the lowlands for the beauty of either its trees or its arrangements. The holly-hedges were planted by the same earl, and they more than rival the forest in fame. Aggregately extending to about 9000 feet, they have a breadth of 10 to 18 feet at the base

and a height of from 15 to 25 feet; they are arranged in double rows, flanking very spacious walks or avenues; and they are kept with great care, and in constant conservation. Numerous single hollies, each about 50 feet high, and of proportionate circumference, are interspersed with the forest, and enliven its aspect. Vast damage was done by the gale of 14 Oct. 1881, which felled no fewer than 30,000 trees on the estate, including the 'Trysting Tree' (a beech 21½ feet in girth, and bearing date 1623). On 26 Aug. 1878 the Queen drove through the park, which she describes as 'really beautiful, reminding one of Windsor and Windsor Forest.'

Tynninghame House stands ¼ mile from the N bank of the Tyne and 2½ miles NE of East Linton. Though a patchwork of pieces added by successive Earls, it was so altered and enlarged about 1829 by Mr Burn, who refaced the whole with native red sandstone, as to present the appearance of a large and handsome mansion, semi-Elizabethan, with small Scotch towers, and a beautiful terrace garden. The interior retains, with little alterations, its original form, and is adorned with portraits of Queen Mary and James VI., of the second Earl by Vandyke, of the eighth Earl and Countess and of Gen. Lord Rothes by Sir Joshua Reynolds, of Canning by Lawrence, etc. Between the mansion and the river, embosomed in a clump of wood, are two fine Norman arches, the only remains of the ancient church, and now the family cemetery of the Earls. Near the house, too, is a fine obelisk to the sixth Earl and Countess. George Arden Baillie Hamilton is the present and eleventh Earl since 1619 (b. 1827; suc. 1870).—*Ord. Sur.*, sh. 33, 1863. See MELLERSTAIN, LENNEL HOUSE, JERVISWOOD; the Rev. A. I. Ritchie's *Churches of St Baldred* (1881); Jn. Small's *Castles and Mansions of the Lothians* (1883); the Rev. P. Hately Waddell's *An Old Kirk Chronicle* (1893).

Tynron, a hamlet and a parish of Upper Nithsdale, W Dumfriesshire. The hamlet stands, 360 feet above sea-level, 2½ miles NE of Moniaive and 5 WSW of Thornhill, under which it has a post office, and contains the parish church and a public school.

The parish is bounded N and NE by Penpont, SE by Keir, S and SW by Glencairn, and NW by Dalry in Kirkcudbrightshire. Its utmost length, from WNW to ESE, is 9½ miles; its breadth varies between 9 furlongs and 4 miles; and its land area is 24½ square miles or 15,683 acres. SHINNEL WATER, rising in the north-western extremity at an altitude of 1500 feet, runs 10½ miles east-south-eastward through all the length of the parish, then 2 miles north-north-eastward along the Keir border, till it falls near Scar Bridge into SCAR WATER, which itself flows 3½ miles south-eastward along the boundary with Penpont. In the extreme E, at the confluence of Shinnel and Scar Waters, the surface declines to 225 feet above the sea; and chief elevations to the N of Shinnel Water, as one goes up the valley, are Tynron Doon (945 feet), Auchengibbert Hill (1221), Bannan (1105), Lamb Craigs (1367), *Hard Knowe (1502), and *Ox Hill (1655); to the S, Maqueston Hill (1063), Thistlemark Hill (1079), *Glenskelly Hill (1493), *Ball Hill (1778), Lamgarroch (1878), and *Colt Hill (1961), where asterisks mark those summits that culminate on the confines of the parish. The surface mainly consists of the glen or strath of the Shinnel, and of two ranges of hills which form its screens. The hills for the most part are green, and constitute capital sheep-pasture. Very much land, which in other circumstances would have remained pastoral and unenclosed, has, in consequence of the vicinity of lime at Barjarg and Closeburn, been reclaimed and subjected to the plough. Very few acres are flat or strictly low ground, and less than one-twentieth of the entire area is in tillage. The soil is rather thin and sandy; and the crops are neither early nor luxuriant. Upwards of 400 acres are under wood, chiefly natural. Greywacke is the prevailing rock; clay slate occurs in one small bed at Corfardine, and was at one time worked; and flinty slate occurs in a small bed at Shinnelhead. The most interesting object in the parish is the Dun or Doon of Tynron.

This is a beautiful steep and conical hill, which, rising up on the peninsula of Scar and Shinnel Waters, terminates the northern hill range of the parish, and commands an extensive and delightful prospect. Its summit, a small piece of table-land, bears marks of having been the site of a fortified castle, and in the 18th century supplied from the ruins many building stones which must have been procured at 4 or 5 miles distance, and laboriously carried up the difficult acclivity. Ditches round the top are still partially traceable; and dense woods anciently covered its sides, and stretched away from its base. Robert Bruce was conducted to the fortalice on the hill by Kirkpatrick of Closeburn, and probably made it his retreat for some time after killing the Red Comyn at Dumfries (1306). James Hogg, the 'Ettrick Shepherd,' was for a short time tenant of the Duke of Buccleuch's farm of Corfardine—a very unfortunate tenancy. A Roman road leads from the Doon along the face of the range to near the head of the parish, and is in many places quite bare of grass. The road from Moniaive to Thornhill crosses the SE end of the parish, and two roads go up the Scar and the Shinnel. The principal landowner is the Duke of Buccleuch. Tynron is in the presbytery of Penpont and the synod of Dumfries; the living is worth £337. The parish church is a neat edifice, built in 1837, and containing 314 sittings. In 1893 a three-light memorial window was placed in it at a cost of £300. The ancient church was a vicarage of the monks of Holywood. A public and an endowed school, with respective accommodation for 36 and 63 children, had (1893) an average attendance of 18 and 36, and grants of £80, 19s. 6d. and £49, 13s. Pop. (1881) 416, (1891) 359.—*Ord. Sur.*, sh. 9, 15, 1863-64.

Tyree (Gael. *tìrith*, 'land of corn'), an island of the Argyllshire Hebrides, 2 miles SW of Coll, 13½ W of Treshnish Point in Mull, 19 NW of Iona, and 37½ SE of Barra. Its length is 14 miles; and its breadth varies between ½ mile and 6 miles. It appears to have been, in Columban times, part of the patrimony of the Church, and to have supplied Iona with considerable quantities of grain; and hence it is supposed to have acquired its name. Another ancient name, still applied to it in romantic tales, is *Eioghachad bar fo thrìuin*, 'The kingdom whose summits are lower than the waves'; and this aptly describes it as the lowest and the flattest of the Hebrides, and as so curiously washed by the sea that from one side the waves may often be seen on the other rising several feet above the level of the rocks. The shores have frequent though not deep indentations, and consists of sandy bays, separated by ridges of rock. The Bay of Gett, on the E side, measures about 2½ miles round the head, and has so firm a sandy beach that a horse at full gallop makes an impression not above ½ inch deep. Upwards of 20 fresh-water lakes together cover some 600 acres. From one of the larger lakes flows the only stream, which, however, is powerful enough to drive a mill. At the northern extremity of the island are considerable accumulations of blown sand. In the S the rocks look so rarely up from the surface as to form only a few scattered elevations; but towards the N they become numerous, and at length occupy the greater part of the surface, preventing the cultivation of the soil, and condemning it to perpetual pasturage. A few low heights are formed on the rocky ground, ranging from 30 to 60 feet in altitude; and three separate hills rise near the southern extremity to a maximum height of 400 feet. All the rest of the island has a mean elevation above high-water mark of scarcely 20 feet; and as it has no tree, and scarcely an enclosure, it is swept with unrestrained violence by the westerly winds, and often so scourged by gales that sown seed and loose dry soil are dispersed, and matured crops of corn and potatoes broken down. A remarkable plain, called the Reef, near the centre of the island, and 1562 acres in area, is as flat as the sea, and has scarcely a swell or even a stone; and, from dread of the effect of the winds should the surface be once broken, it is kept in a state of perpetual pasture, and offers a singular spectacle of rich

verdure. The soil is in general light, consisting of sand, calcareous earth, and moss. The sand very greatly predominates, but in its general diffusion it is of a calcareous nature, consisting, together with quartz, of a large proportion of pulverised sea-shells. The island in consequence is one of the most fertile tracts of land in the Hebrides. Its fertility is greatly aided, too, by a regular and constant moisture, occasioned partly by its flatness and partly by its peculiar climate and exposure. The regularity of the moisture is everywhere proved by the flourishing growth in the corn-fields of the yellow iris, the *Polygonum viviparum*, and other aquatic plants. Such natural pastures as, from their soil and position, have least humidity are surprisingly rich, and produce white clover in such abundance as almost to exclude the grasses. Marshes are unknown, and bogs are so limited that the inhabitants are under the necessity of importing their fuel from Mull, and in some instances have been driven to the ruinous resource of paring the soil down occasionally to the subjacent rock. So wondrously destitute is the island of wood that, excepting one species of willow, it may be said not to possess a ligneous fibre. Yet the total want of shelter, while in many respects injurious to agriculture, combines with the level nature of the surface to occasion so equable a distribution of sand-drift by the winds, that, instead of low lands being overwhelmed as in many places throughout the other Hebrides and the Shetland Islands, the drift brings a perpetual renewal of calcareous manure, and scarcely anywhere accumulates to such a degree as to choke vegetation. At the northern extremity, however, as in the S end of Coll, protuberant rocks afford local shelter, and occasion the sand to accumulate. Agricultural practice has undergone some improvements, but is still in a comparatively rude condition. About 5850 acres are in tillage; and about 10,725 are pastoral or waste. The produce of all kinds of crops is comparatively small. The rearing of black cattle is a chief employment, and the exportation of them a principal means of support. Poultry and eggs also are largely exported. Fishing, contrary to the prevailing practice in the Hebrides, engages comparatively little attention. During the Crofter agitation a party of marines and police was landed here, but although they remained on the island for some time no collision took place between them and the natives. As in other places the Crofters' Commission has effected much improvement in the condition of the people. On the strength of the security afforded under the Crofters Act, in 1892-94 about thirty houses were almost entirely rebuilt voluntarily by crofters, cottars, and others. The walls of the houses in Tyree are about 5 feet thick and 6 to 7 feet high, and as a rule consist of a facing of stone masonry on the inside and outside, with sand between. The roof rests on the inner third or so of the wall. The majority of the houses are thatched, a number are provided with felt roofs, some with corrugated iron, and a few are slated. The windows consist of tunnels, with a glass frame at about the inner end, while the door is placed at the end of the passage through the thick wall which is called the doorway. As a rule the houses are cleanly and well kept, and built in the orthodox style will stand a hurricane without the least injury. The wind strikes against the walls, and shoots over the roof without scarcely touching it, while within its noise is unheard. The Duke of Argyll is the sole proprietor. The predominant rock of the island is gneiss; but this abounds with veins of granite, and imbeds masses of primitive limestone. One of the limestone masses, long and favourably known for the flesh-coloured marble into which it has been cut for ornamental architecture, is an irregular rock, 100 feet in diameter, lying among the gneiss without stratification or continuity. In consequence of its hardness, even though cheaper, in spite of that inconvenience, than many foreign marbles of far inferior beauty, it has lost the patronage of public caprice, and ceased to be in request. Its very tint is finely relieved by the dark green crystals of augite and hornblende which are

imbedded in it. The deposit is quite unstratified. Another mass, ten times the size of the former, and equally irregular, resembles the marble of Iona in whiteness, texture, and fracture, yet is generally impure, and seems to have been quarried only for building dikes. The Hill of Ceannharra, situated at the SW point of the island, and presenting a mural face to the sea, is perforated with a great number of caves, some of which are large and scoured by the surge, while all are frequented by flocks of sea-fowls. Remains of no fewer than 39 watch-towers or forts, within view of one another, encircle the coast of Tyree and Coll; and there are 9 or 10 standing-stones, besides minor antiquities. The inhabitants relate many Fingalian and other tales of battles and chieftains, and even affect to point out the graves of the heroes of their legends. On an islet, now converted into a peninsula, anciently stood a square turreted castle, accessible only by a drawbridge; and on its ruins was erected, in 1748, a house for the factor of the Duke of Argyll. Fairs are held on the Wednesday in May before Mull and on the Monday in August before Mull. The island has a post office under Oban, with money order, savings bank, and telegraph departments, and communicates weekly by steamer with the Clyde. At Heynish there is a harbour, and the quay was built in 1836. Tyree, to which Coll was annexed from 1618 to 1866, is now a separate parish, in the presbytery of Mull and the synod of Argyll; the living is worth £250. The church was built in 1776, enlarged in 1786, and repaired in 1893, when a new pulpit was added. There are Free and Baptist churches in Tyree; and five public schools—Balemartin, Cornaigmore, Hillipol, Ruaig, and Scarnish—with respective accommodation for 104, 130, 120, 94, and 70 children, had (1893) an average attendance of 91, 109, 59, 59, and 42, and grants of £100, 2s., £162, 14s., £76, 4s. 6d., £79, 1s., and £62, 7s. Pop. (1881) 2730, (1891) 2449.

Tyrie, a parish of Buchan, N Aberdeenshire, whose church stands close to the northern border, 3½ miles S of Rosehearty and 5 SW of Fraserburgh, under which there is a post office. Containing also the town of New Pitsligo, the parish is bounded N by Aberdour and Pitsligo, E and SE by Rathen and Strichen, S by New Deer, and W and NW by Aberdour. Its utmost length, from NE to SW, is 7½ miles; its breadth varies between 1¼ and 3½ miles; and its area is 17½ square miles or 11,193½ acres, of which 11½ are water. Streams there are none of any size; but the drainage of the northern district goes to the Water of Philorth, and of the rest of the parish to either North or South Ugie Water. The surface is somewhat hilly, declining near the parish church to 148 feet above sea-level, and rising thence to 411 feet near Blackrigg, 454 near Monkswell, and 651 at the Hill of Turlundie. Granite is the predominant rock; and the soil on the hills is comparatively shallow, in the valleys is generally deep, and, except where mossy or moorish, is mostly a fertile reddish-coloured loam. Great improvements have been effected in the parish since 1820 in the way of draining, reclaiming, fencing, and building. Several tumuli, cairns, and Picts' houses have been demolished, as well as a mote-hill near the parish church, in whose porch is the 'Raven Stone,' which formed the foundation stone of the ancient church. That church, St Andrew's or the White Kirk of Buchan, is said to have been founded about the year 1004, when a Mormaer of Buchan had routed a Danish host on the neighbouring hills. BOYNDLIE, noticed separately, is the only mansion. Giving off its south-western portion to the *quoad sacra* parish of New Pitsligo, Tyrie is in the presbytery of Deer and the synod of Aberdeen; the living is worth £180. The present church, built in 1800, contains 400 sittings. Tyrie public and Boyndlie Episcopalian schools, with respective accommodation for 156 and 129 children, had (1893) an average attendance of 94 and 75, and grants of £87, 17s. 6d. and £62, 19s. Pop. (1801) 1044, (1881) 1613, (1861) 3043, (1871) 3446, (1881) 3391, (1891) 2843, of whom 795 were in the ecclesiastical parish.—*Ord. Sur.*, shs. 97, 87, 1876.

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UAMH MHOR or UAMVAR. See KILMADOCK.

Uddingston, a thriving town of recent growth in Bothwell parish, Lanarkshire, near the right bank of the Clyde, $3\frac{1}{2}$ miles NNW of Hamilton, and $7\frac{1}{2}$ ESE of Glasgow. Standing amid pleasant environs, and commanding a brilliant view down the valley of the Clyde, it chiefly consists of modern, well-built houses, occupied by Glasgow merchants, carries on an extensive manufacture of agricultural implements, and has a post office under Glasgow, with money order, savings bank, and telegraph departments, branches of the Bank of Scotland, and the British Linen Co.'s Bank, stations on the Caledonian and North British railways, a gaswork, an iron-foundry, a public hall, a public school, a private school, a reading-room, a bowling and tennis club, and a hotel. The Established church, built as a chapel of ease in 1873 at a cost of over £4000, was raised to *quoad sacra* parochial status in 1874. It is an Early English structure, with 850 sittings, and a tower and spire 100 feet high. The Free church, built in 1876 at a cost of £3300, contains 500 sittings; and there are also a U.P. church (450 sittings), a handsome Early Gothic Evangelical Union church (1880; cost over £1500; 400 sittings), and St John the Baptist's Roman Catholic chapel-school (1883; 600 sittings). There is also a Scotch Episcopal church (241 sittings), an Early English structure erected in 1890. Two early British urns were dug up in 1885. Pop. of *q.s.* parish (1881) 4086, (1891) 5725; of town (1841) 703, (1861) 1256, (1871) 1997, (1881) 3542, (1891) 5099, of whom 2678 were females. Houses in town (1891) inhabited 967, vacant 38, building 38.—*Ord. Sur.*, sh. 31, 1867.

Uddington. See DOUGLAS.

Udny, a village and a parish of Aberdeenshire. The village stands 283 feet above sea-level and $2\frac{1}{2}$ miles NW of Udny station on the Formartine and Buchan section (1861) of the Great North of Scotland railway, this being 5 miles SSW of Ellon, $8\frac{1}{2}$ N by E of Dyce Junction, and $14\frac{1}{2}$ NNW of Aberdeen, under which there is a post and railway telegraph office. There is also a branch (1875) of the Town and County Bank; and horse, cattle, and sheep markets are held at Udny station on the last Thursday of every month.

The parish, formed in 1597 out of portions of Ellon, Tarves, Logie-Buchan, and Foveran, is bounded N by Tarves, E by Ellon, Logie-Buchan, Foveran, and Belhelvie, S by New Machar, SW by Keithhall, W by Bourtie, and NW by Tarves. Its utmost length, from N by E to S by W, is 6 miles; and its breadth varies between $1\frac{1}{2}$ and $6\frac{1}{2}$ miles. The Torryleith portion of the parish, that intervened between the parish of New Machar and its Straloch detached portion, was transferred by the Boundary Commissioners in 1891 to the latter parish. Streams there are none of any size; but the drainage is carried eastward and north-eastward to the Ythan by four or five little rivulets. In the N, at the Mill of Dumbreck, the surface declines to 83 feet above sea-level; and thence it rises very gently to 309 feet at Newseat, 310 at West Coullie, and 620 at the Changehill on the south-western border. Granite, of a pale greyish hue, has been largely quarried; and an inferior limestone was at one time worked. The soil, in most parts a deep loam incumbent on granite or clay, is here and there naturally marshy, but has been greatly improved by draining. About one-fifth is either pastoral or waste; nearly one-thirtieth is under wood; and almost all the remainder is in tillage. Udny Castle, 3 furlongs NNE of the village, is a massive three-storeyed tower, 46 feet long, 35 broad, and upwards of 100 high, with walls 9 feet in thickness. It is supposed to have been founded in the 13th century; but a large and handsome addition has been made by the present proprietor, John Henry Fullarton Udny, Esq. (b. 1853; suc. 1861), the descendant of a long line of lairds. The mansions of PITMEDDEN and PITTRICHIE

are noticed separately. Udny is in the presbytery of Ellon and the synod of Aberdeen; the living is worth £296. The parish church, built in 1821, was renovated and improved in 1891, when an organ was introduced. There is also a Free church; and two public schools, Pitmedden and Udny Green, with respective accommodation for 142 and 100 children, had (1893) an average attendance of 118 and 81, and grants of £117, 5s. and £78, 8s. 4d. Pop. (1801) 1242, (1831) 1309, (1861) 1668, (1871) 1663, (1881) 1638, (1891) 1677.—*Ord. Sur.*, shs. 77, 87, 1873-76.

Udston, a residential estate in Hamilton parish, Lanarkshire. Purchased in 1893 as a summer residence by Georgina Lady Belhaven and Stenton from the executors of the late John Clark Forrest, Esq., it belonged originally, about the year 1593, to John Hamilton of Udston, an ancestor of the late Lord Belhaven and Stenton.

Ugie, a river of NE Aberdeenshire, issuing from a lochlet near Windyheads, in Aberdour parish, within 3 miles of the N coast, and running 21 miles, generally in a south-easterly direction, to the sea, $1\frac{1}{2}$ mile NW of the town of Peterhead, on the E coast. It runs, in its upper stretches, through Aberdour, Tyrie, and Strichen; it next divides Strichen and Lonmay on its left bank from Old Deer and Longside on its right; and it finally passes through Longside, and between St Fergus and Peterhead, to the sea. Its chief tributary, the Water of Deer or South Ugie Water, which joins it in Longside, has a course of $16\frac{1}{2}$ miles, and almost contests the palm of being the parent stream. The Ugie is navigable for about $1\frac{1}{2}$ mile from its mouth, in its lower course is slow and smooth, and is a very good trouting stream.—*Ord. Sur.*, shs. 87, 97, 1876.

Uie or Eye. See KNOCK.

Uig, a Hebridean parish of Ross and Cromarty, whose church stands near the W coast of Lewis, 34 miles W by S of the post-town, Stornoway. The parish includes the FLANNAN ISLES, the islands of BERNERA, MEALISTA, and PABA, with some smaller islands. It is bounded N by the ocean and Barvas, NE by Stornoway, E by Lochs, S by Harris and Loch Resart, and W by the ocean. Its utmost length, from NE to SW, is $22\frac{1}{2}$ miles; and its utmost breadth is $17\frac{1}{2}$ miles. The Carloway detached portion of the parish of Lochs was divided by the Boundary Commissioners in 1891 between the parishes of Uig and Barvas—all to the west of a line running through Loch Langabhat, Loch Ghleadhairean, Loch Shannabhat, Loch Mor Connaidh, and Loch Airdh Seibh, on till it reaches the boundary of Uig in Glenn Eiracleit, being transferred to Uig parish. The north-western division of the parish is cut into a labyrinth of islands and peninsulas by the numerous and intricate ramifications of Loch Roag. A large and comparatively little indented peninsula between that sea-loch and Loch Resart forms the south-western division, and sends out two prominent headlands, the most westerly ground in the island. Between these promontories, the more northerly of which bears the name of Gallon Head, and which are 3 miles asunder, occurs the Bay of Uig, the most important bay in the parish. This bay penetrates the interior to the extent of $3\frac{1}{2}$ miles, and has a mean breadth of about 1 mile; and while quite exposed, over 2 miles of its extent, to the tremendous westerly gales and surges of the Atlantic, it afterwards suddenly contracts, and then shoots out into a series of sheltered creeks. Fresh-water lakes are very numerous in most parts of the interior, and reflect from their surface the brown, bleak features of dismal moors. The only noticeable one is Loch Langabhat ($8\frac{1}{2}$ miles $\times$ 7 furlongs), chiefly on the boundary with the aptly-named conterminous parish of LOCHS. The lakes, excepting this one, rarely attain 6 miles in circumference; they abound with small trout; and, owing to the moorishness of the grounds which their feeders

drain, their water has a brownish colour. There are four rivulets in which a few salmon are caught. The seas and bays on the coast abound with cod, ling, dog-fish, coal-fish, and most kinds of shell-fish, and are frequented by English vessels for supplies of lobsters. Mealasbhal (1750 feet) is the highest of several hills that exceed 1500 feet above sea-level; but the parish generally, though loftier as a whole than any other in Lewis, exhibits throughout the interior a continuous assemblage of low hills and flat moors. Its seaboard is for the most part low, has a sandy soil, and contains nearly all the cultivated land. The soil of the interior is first thin, light, and mixed with a little clay, and farther back almost wholly moss; yet it is largely capable of improvement, and with the aid of sea-weed for manure produces forced crops. The proportion which arable grounds and good pasture bear to the moors is little, if any, more than as 1 to 20. At the head of Loch Roag is a megalithic cruciform Druidical circle called the Circle of Callernish, but which is rather in the form of a Roman cross than a circle, although there is a circle to which the four arms of the cross lead. This Druidical temple is one of the largest and most complete of its kind in Scotland, while it, the one at Stenhouse in Orkney, and Stonehenge in England are the most remarkable in Britain. The total number of stones when the temple was complete was 65, of which 45 are still standing. These range from 4 to 13 feet in height, with one 16 feet high, and are placed on the long line of the cross, along the short line, and on the circle. In the immediate neighbourhood are several smaller circles, some of them being, however, as large as 50 feet in diameter. At Mealista Uig, near the remains of an ancient nameless nunnery, were discovered some years ago about 60 beautifully executed ebony figures, some 4 inches long, evidently of very ancient manufacture, and supposed from their variety of form and shape to have been designed as chessmen. Notwithstanding the remoteness of its situation, the parish was strongly affected by the change of proprietorship and the new system of improvement noticed in our article on Lewis; but, all the same, it subsequently figured prominently in the successful Crofter agitation. Uig is in the presbytery of Lewis and the synod of Glenelg; the living is worth £250. The parish church was built in 1829, and contains 1000 sittings. There is a chapel of ease at Bernera, and there are two Free churches—the one of Uig, the other of Carloway. Eight public schools, with total accommodation for 949 children, had (1893) an average attendance of 653, and grants amounting to £799, 14s. Pop. (1801) 2086, (1841) 3316, (1861) 2878, (1871) 3143, (1881) 3489, (1891) 4621, of whom 4422 were Gaelic-speaking.—*Ord. Sur.*, shs. 104, 105, 98, 99, 1858.

Uig, a village in Snizort parish, Isle of Skye, Inverness-shire, at the head of Uig Bay, 14 miles NNW of Portree, under which it has a post office, with money order, savings bank, and telegraph departments. There are branch churches belonging to the Established and Free bodies. Here also are a steamboat pier and a good hotel. Great damage was done to the place by the 'big flood' of Oct. 1877. Triangular Uig Bay measures 1 mile across the entrance, and $1\frac{1}{2}$ mile thence to its inmost recess.

Uist, North, an island and parish of the Outer Hebrides, Inverness-shire. The island is bounded on the W and NW by the Atlantic Ocean, on the NE by the Sound of Harris, on the E by the Little Minch, on the S, separating it from Benbecula, by a narrow, complicated, shallow strait, densely packed with isles and islets, and partly fordable between low water and half tide. Its greatest length, from E by N to W by S, is 18 miles; its greatest breadth, in the opposite direction, is $13\frac{1}{2}$ miles; its breadth, over great part, does not average more than $6\frac{1}{2}$ miles; and its area is 75,431 acres. The entire eastern half is a labyrinth of land and water cut into innumerable peninsulas and islands of every imaginable form, partly by the ramifications of Lochs EVORT and MADDY, inlets of the sea, and partly by the

existence of ragged and many-armed fresh-water lakes; and, looked at from almost every vantage ground, it seems to defy description or exploration, so intricate and broken is the outline. The whole of the territory thus cut into fragments is a dreary, flat, marshy moorland—'a brown, peaty, and boggy tract,' says Dr Macculloch, 'so interspersed with lakes and rocks as to be nearly impassable, and producing a scanty and wretched herbage for a few animals during the driest months of summer, while in the winter it is resigned to wild geese, ducks, and swans, who divide its waste and watery region with the sea-gulls which the ocean can no longer protect or feed.' Yet the tract is not all so low as its general character would seem to indicate; but presents, in a frequently broken belt of $2\frac{1}{2}$ miles mean breadth along the coast, a range of hills, which gradually rise from the N to the S, reaching at one point, Ben Eval, to an altitude of 1183 feet. The western portion of the island is, comparatively speaking, continuous land; and sends up, in lines from SE to NW, three distinct groups or ranges of heights. One of these ranges bounds the Sound of Harris; and, though lifting its chief summits of Ben Breach and Ben More to nearly 1000 feet of altitude, is of tame appearance. The second range extends almost from end to end of the district along very nearly its middle, and sends up its principal eminence, Ben Croghan, to a height of 1500 feet. The third range is a prolonged and irregular group of much less elevation than the others, of a smooth and undulating surface, and with declivities which fall off in gentle slopes to the SW. A belt of uneven low land between this last group and the sea is exceedingly beautiful in summer and autumn, produces luxuriant crops of oats and barley, and forms both the chief and the most profitable area of arable ground in the island. Its soil is naturally a mixture of clay and peat, and, jointly by culture and by the admixture of drift sand from the coast, it has become a rich and fertile mould. All its seaboard, with the exception of a few bold rocky headlands, consists chiefly of various pulverised shells, which are wafted over all the tract by the powerful western winds, and fertilise it with all the power of rich lime manure. Yet beautiful and productive as this district generally is, it often in winter suffers such denudation of its more tender and valuable grasses, by the action of rain, frost, and storms, that the cattle which feed upon it can find no sustenance, and must be sustained by the stores of the corn-yards. A curious cave called Sloch-a-choire is at Tighary Point near the old parish church, and 3 miles distant at Scolpe is a larger, but less curious one. There are numerous rude monuments and ruins, probably of Scandinavian origin, to which various traditions are attached. Gneiss forms the great bulk of the island; argillaceous schist is the chief constituent of the range of heights on the eastern shore; and trap occurs, among the same heights, in numerous veins. The chief useful mineral, apart from the building material of the rocks, is a species of bog-iron accompanied by pyrites which, with the assistance of tormentil, galium, lichens, and other native plants, is employed by the natives for dyeing. The sea-lochs and bays abound with marine fish; and the fresh-water lakes contain plenty of trout, and are frequented by flocks of wild geese, ducks, and swans. The kelp trade is kept alive at the chemical works on Loch Evort, the tangle weed being collected largely at Loch Boisdale in South Uist, and shipped thence. The total quantity of kelp manufactured in a recent year (the largest, however, for several preceding years) was about 200 tons, which was shipped to Bowling on the Clyde. The inhabitants have shared very largely in the miseries so common throughout the Hebrides and the Highland shores of the mainland. Hence North and South Uist figured prominently in the agitation which resulted in the Crofters Commission and its beneficent awards.

The parish comprehends the island of North Uist, a number of inhabited islands lying adjacent to North Uist or near it, and a great many neighbouring isles and

islets, some of them covered with verdure, and suitable for pasture, others bare rocks, valuable only for the seals which frequent them. The principal islands, additional to North Uist itself, are Kirkebost, Illeray, Baleshare, Grimsay, Vallay, and Orinsay, all connected with the island of North Uist by dry sands at low water; Rona, less than 1 mile to the SE; Boreray, about 2 miles to the N; and Heisker, about 10 miles to the W. It contains the post-office stations of LOCH-MADDY and Carinish. Giving off a portion to Trumisgarry *quoad sacra* parish, it is in the presbytery of Uist and synod of Glenelg; the living is worth £193. A substantial new parish church, seated for about 400, was erected in 1894 at Balranald. It is a handsome structure, erected conjointly by the heritor, Sir John Orde, and the Baird Trust, and contains a belfry in which is hung a bell weighing 5 cwt. There are a *quoad sacra* parish church at Trumisgarry, an Established mission church at Carinish, and Free churches at Pabla and Carinish. Twelve board schools, all of recent erection, with total accommodation for 905 scholars, had (1898) an average attendance of 477, and grants amounting to £632, 11s. 6d. Pop. of island (1841) 8788, (1861) 8034, (1871) 8222, (1881) 8371, (1891) 8231; of parish (1801) 8010, (1831) 4603, (1861) 3959, (1871) 4107, (1881) 4264, (1891) 4187, of whom 3927 were Gaelic-speaking, and 3341 were in North Uist ecclesiastical parish.

Uist, South, an island and a parish of the Outer Hebrides, Inverness-shire. The island is bounded on the N by a strait which separates it from Benbecula, and is shallow, packed with rocks and flat islets, surpassingly intricate, and nearly dry in one part at low water; on the E by the Little Minch; on the S by a sound from 5 to 7½ miles broad, which separates it from Barra, contains several considerable isles, and is interspersed with sunk rocks; and on the W by the Atlantic Ocean. Its greatest length, from N to S, is 22 miles; its greatest breadth is 7½ miles; and its area, including interior and intersecting waters, is about 110 square miles. The northern district, measuring about 14 square miles, bears the separate name of Iachdar; forms practically a separate island, divided from the rest of South Uist by the sea-lochs Skipport and Bee or Gamsolechan, entering from respectively the E and the W and uniting in the middle; and is a low flat tract, cut into fragments and shreds by slender, long, and forking bays. The eastern district, all southward from Loch Skipport, is predominantly mountainous, hilly, and mossy; it is divided into three sections by the sea-lochs Eynort and Boisdale cutting completely across it at distances of respectively about 7½ and 12 miles S of Loch Skipport; and is further divided into peninsulas by their many and intricate ramifications. The section between Loch Skipport and Loch Eynort comprises between a third and a fourth of the entire land area of the island, and possesses the two highest summits in the island, namely Mount Hecla (1988 feet) and Ben More (2085). The section between Loch Eynort and Loch Boisdale comprises an area of about 10 square miles, and is comparatively flat, the hills with a few exceptions not rising much above 500 feet. The section S of Loch Boisdale comprises a land area of about 10 square miles, and consists largely of three or four rounded eminences, rising to altitudes of less than 1000 feet. The principal headland on the E coast is Ru-Ushinish, projecting from the skirt of Mount Hecla. Loch Skipport, Loch Eynort, and five or six smaller sea-lochs in the E form practicable natural harbours; and Loch Boisdale is one of the safest and most capacious harbours in the Hebrides; and offers a favourite retreat to storm-tossed passing vessels. The western district, all southward from Loch Bee, is low, flat, and sandy; has, near the middle of its coast, the headland of Ru-Ardvula; is skirted along its shore with a fine white sand consisting chiefly of pulverised sea-shells; and contains numerous fresh-water lakes. These, with a few to be found on the western side, are distinguished for either the quantity or the quality of their

fish, and are generally shallow and impregnated with peat, and appear to be the mere repositories of a general drainage which has few outlets to the sea. With inconsiderable exceptions, perennial streams are unknown. The universal prevalence of hard gneiss rock, passing in some places into coarse granite, presents neither subterranean receptacles for water nor fissures to transmit it, and occasions an almost total absence of springs. The climate, however, for a Hebridean one, is far from being moist, and the air is generally mild and pure.

The only cave is at Corodale, on the E coast between Loch Skipport and Loch Eynort. It gave refuge for some days in 1746 to Prince Charles Edward, and is called the Prince's Cave. Flora Macdonald (1722-90) was born at Molton. The soil on the uplands is so barren as mostly to afford but poor pasturage; on the tracts between the uplands and the lakes is partly black loam and partly moss; on the western seaboard, from end to end of that tract, over a breadth varying between ½ mile and 1 mile, is all sand; on the most productive arable grounds is an artificial mixture of sand, black earth, and manure. The uplands are devoted chiefly to the rearing of black cattle, to the improvement of which by the introduction of new breeds, great attention has for some time been paid. The middle tract or belt of low country along the W base of the uplands is partly firm ground, naturally drained by runnels into the lake, and under cultivation, and partly black peaty moss undergoing gradual amelioration from diffusion on it of drift calcareous sand. The low sandy belt along the W shore is all arable, and produces, with aid of ordinary manures, good crops of oats, barley, and potatoes. Cheviot sheep have been introduced with some advantage. The district figured in the agitation which resulted in the appointment of the Crofters Commission and the considerable amelioration of the condition of the people. South Uist has regular steamer communication with Glasgow, Oban, Dunvegan, Portree, and Loch Maddy, and has a post and telegraph office, under Lochboisdale Pier, at HOWMORE.

The parish comprehends the inhabited islands of South Uist, BENBECULA, ERISKA, FLADDA, GRIMISAY, and WIAY, and some uninhabited islets. Its greatest length, from N to S, is 38 miles; its greatest breadth is 8 miles; and its area is 90,099 acres. About 19,700 acres are arable, and the rest of the land is variously mountain, hill, moor, and moss. This parish is in the presbytery of Uist and synod of Glenelg; the living is worth £270. The parochial church stands near the centre of the parish, was built in 1833, and contains 439 sittings. An Established mission church is at Boisdale, built in 1836, with 230 sittings; another in Benbecula, built in 1824, with about 270 sittings; and a third at Iachdar. There is a Free church within the parish. One Roman Catholic chapel is at Ardkenneth, was built in 1829, and contains 400 sittings; another, in Benbecula, was built in 1884, and contains also 400 sittings; a third is in Eriska, was built in 1852, and contains 200 sittings; a fourth is at Bornish, was built in 1837, and contains 400 sittings; and a fifth is at Dalibrog, was built in 1868, and contains 500 sittings. There are nine public schools, with total accommodation for 1024 children, an average attendance of 661, and grants amounting to £690, 8s. 6d. Pop. of island (1841) 5093, (1861) 3406, (1871) 3669, (1881) 3825, (1891) 3708; of parish (1801) 4597, (1831) 6890, (1861) 5358, (1871) 5749, (1881) 6078, (1891) 5821, of whom 5532 were Gaelic-speaking.

Ulbster, a post office in Wick parish, Caithness, 7½ miles SSW of Wick town.

Ullapool, a fishing village and a *quoad sacra* parish in Lochbroom parish, NW Ross and Cromarty. Backed to the E by a hill 900 feet high, the village stands on the NE shore of salt-water Loch Broom, 50 miles by water ESE of Stornoway, and 32 by road NW of Garve station on the Dingwall and Skye railway, this being 11½ miles W by N of Dingwall. With Stornoway and Glasgow it communicates by steamer, and with Garve,

its nearest railway station, by coach. A branch line of railway from Garve to Ullapool was sanctioned in 1893. The village was founded in 1783 by the British Fishery Society, and was intended to be a beautiful and spacious town on a regular plan. But, in consequence of the great declension which took place in the herring fisheries, its progress was arrested until, having passed from the proprietorship of the Fishery Society to that of the late Sir James Matheson, Bart., of Lewis, it underwent great improvement alike in its physical condition and in its appliances for traffic and communications. During the herring season it is attended by curers from all parts of the east and west coast, and also from Ireland, and presents a very animated appearance. When the shoals of herring fairly set in the number taken is very great, and they are of the best quality. In summer the place is greatly patronized by sportsmen to enjoy the fishing and shooting—a grouse-shooting box being attached to the hotels. It exhibits, over the face of its terraced promontory, several lines of houses, most of them white-washed, and either slated or tiled. In the foreground are a neat harbour and a breakwater—the harbour safe, spacious, and well kept. The principal buildings, both public and private, are all arranged along the beach facing the loch, and extending from end to end of the village. Three streets of houses behind, parallel, spacious, and provided with garden-plots, were lined off for the poorer fishermen, but have never been finished. Still the village is well suited to be a noble watering-place, its beach being capital bathing ground, its climate pleasant and salubrious, and its mountain scenery highly picturesque. There are a post office, with money order, savings bank, and telegraph departments, a branch of the National Bank, several hotels, an Established church (1829; 600 sittings), a Free church, dating from Disruption times, and a large public school (1877). The *quoad sacra* parish, constituted by the General Assembly in 1833, and reconstituted by the Court of Teinds in 1859, is in the presbytery of Lochcarron and the synod of Glenelg. The minister's stipend is £120. Pop. of village (1836) 730, (1861) 908, (1871) 752, (1881) 897, (1891) 868; of *q. s.* parish (1871) 2624, (1881) 2573, (1891) 2423, of whom 2096 were Gaelic-speaking.—*Ord. Sur.*, sh. 101, 1882.

Ulston. See JEDBURGH.

Ulva, one of the Argyllshire Hebrides, in Kilninian and Kilmore parish, on the W coast of Mull, lying between Loch Tuadh and the entrance of Loch-na-Keal, 10½ miles WSW of Aros, under which there is a post office of Ulva Ferry. The island is separated on the W from Gometra by a strait so narrow that, except as seen on its very shores, they appear to be one island; on the N and NE, from Mornish in Mull by Loch Tuadh, which decreases eastward from a breadth of 1½ mile to a shallow and very narrow strait; on the SW, from Torosay in Mull by Loch-na-Keal, 1½ mile broad; and on the S from Little Colonsay by a sound 1 mile broad. Length from E to W, 5 miles; maximum breadth, 2½ miles; area, 7½ square miles. The island is distinguished for grand basaltic colonnades and picturesque combinations of these with amorphous masses of trap. Its surface rises from the shore in successive ranges of terraces to an extreme altitude of 1400 feet. Its rocks are a dark bluish trap, now columnar, and now amorphous; and an amygdaloid, abounding in analcime and mesotype, now above the trap, now below it, and now interposed between two ranges of its columns. Some low but well-formed colonnades occur along the shores. The upper ranges seldom exceed 20 feet in height, but are very numerous; and they preserve little or no continuity, but exist in detached parts which in numerous places resemble fragments of walls and ruined towers. 'The ranges,' says Dr Macculloch, 'are often as regular as those of Staffa, although on a much less scale; and pass gradually from that regularity of form into the most shapeless masses. In many places they afford elegant and picturesque compositions, which, although passed every day by the crowds who visit Staffa, appear to have been unnoticed. If either their numbers, extent,

or picturesque appearance be considered, they are more deserving of admiration than even those of the Giant's Causeway; and had they been the only basaltic columns on this coast, they might have acquired the fame which they merit. But Ulva is eclipsed by the superior lustre of Staffa; and, while the mass of mankind is content to follow the individual who first led the way, its beauties will probably be still consigned to neglect.' In the north a stream makes a waterfall of upwards of 60 feet into the sea. From 1473 and earlier the island was possessed by the Macquarries, whose last and sixteenth chief was visited here by Dr Johnson in 1773. Near his old mansion stands Ulva House, a large modern building, the seat of Francis William Clark, Esq. The *quoad sacra* parish of Ulva was disjoined, as a parliamentary church district, from the Mull parish of Kilninian and Kilmore in 1828, and was made a parochial erection by the General Assembly in 1833. Comprehending the islands of Ulva, Gometra, Colonsay, and Staffa, with a portion of the mainland of Mull, it is in the presbytery of Mull and the synod of Argyll. The minister's stipend is £145. The church, built in 1827, contains 320 sittings. Pop. of *q. s.* parish (1871) 222, (1881) 166, (1891) 164; of island (1837) 168, (1851) 204, (1871) 71, (1881) 53, (1891) 46.

Unapool. See KYLESKU.

Underwood, a commodious mansion of about 1792, in Craigie parish, Ayrshire, 3 miles WNW of Tarbolton.

Union Bridge. See HUTTON.

Union Canal, a canal in Edinburgh, Linlithgow, and Stirling shires, going 81½ miles westward from Port-Hopetoun, in the W of the city of Edinburgh, to a junction with the Forth and Clyde Canal at Port-Downie, 1½ mile W by S of Falkirk. Authorised in 1817, and begun to be cut in 1818, it was completed in the early part of 1822, the estimated cost being £235,167, but the actual cost nearly £400,000 up to the time of opening, and £600,000 within four years of that date. It was designed entirely for inland traffic, principally between Edinburgh and Glasgow, and for a long time was often called the Edinburgh and Glasgow Canal. It runs a total distance of only 25 miles measured in a direct line; and it expends the additional 6½ miles of its actual length mainly in sinuosities, designed to maintain the dead level, and to avoid the cost and delays of lockage. It traverses the parishes of St Cuthberts, Colinton, Currie, Ratho, Kirkliston, Uphall, Abercorn, Linlithgow, Muiravonside, Polmont, and Falkirk; and is flanked, over most of its course, by productive and populous country. It proceeds on a level for 30 miles from Port-Hopetoun; descends 110 feet by 11 locks in the last 1½ mile to Port-Downie; and is 40 feet wide at the water-surface, 20 wide at the bottom, and 5 deep throughout. An aqueduct 65 feet high and 500 long takes it across the Water of Leith; a still grander aqueduct, with 23 arches, takes it across the river Avon; a tunnel 700 yards long takes it through a hill in the neighbourhood of Falkirk; and important cuttings, embankments, and works of masonry occur in many other parts of its course. The traffic on it, from the very commencement, proved un-compensating; was estimated, in the project for its formation, to yield a gross return of £55,000 a year, yielded a natural return, during the first seven years, of less than £17,000 a year; suffered vast decrease from the opening of the Edinburgh and Glasgow railway; and a short time afterwards lost all its passenger department, and diminished greatly in its mercantile and mineral departments. The canal was sold in 1848 to the Edinburgh and Glasgow railway company, and passed in 1865, along with the Edinburgh and Glasgow railway, to the North British railway company.

Unst (anc. *Onyst*, *Onist*, and *Ornist* = *örn* - *en* - *nyst*, 'eagle's nest'), an island in the extreme N of Shetland, 4½ furlongs E of the nearest point of Yell, 2½ miles N of Fetlar, and 37½ N by E of Lerwick, under which there is a post and telegraph office of Uyea Sound. Its utmost length, from N by E to S by W, is 12½ miles; its breadth, from E to W, varies between 2½ and 5½.

miles; and its land area, inclusive of UYEA, HAAFGUNIE, BALTA, and some smaller islets, is $4\frac{1}{2}$ square miles, or 29,856 acres. The coast, over much the larger part of its extent, is a constant alternation of headlands, and of indenting bays and creeks. The headlands, especially in the W and N, are precipitous, rocky, and high—the loftiest attaining a height of over 400 feet. The bays, on the contrary, are, for the most part, fringed with low, shelving, and sandy shores. The chief are Burra Firth on the N, Nor Wick, Harolds Wick, Balta Sound, and Sand Wick on the E, Uyea Sound on the S, and Lunda Wick on the W: but though most may often protect a vessel for a tide or two, none of them are safe harbours. Burra Firth and Nor Wick have a picturesque aspect, and are environed with much good land. Balta Sound on the E, and Uyea Sound on the S, are so covered by isles of their own name, and screened by projecting headlands at their entrances, as to afford good shelter to shipping. The tides on the coast flow nearly southward, and ebb northward, but are often flung from their direction, and whirled into eddies, by the projections and recesses of the coast; they run at spring with a velocity of 6 miles an hour; and off Lamba Ness, the NE extremity of the island, they form a tumbling and spouting sea, inferior in its dangers only to that of Sumburgh Roost, and so impetuous and heaving, even in calm weather, as to prove dangerous to fishermen. Of numerous caves upon the coasts, one at Sha displays a roof supported by natural octagonal pillars; several in Burra Firth have the sea for their pavement, and run backward under the hills; one at the hill of Saxa-Vord, 300 feet long and of considerable height, is entered by a grand natural arch; and one a little E of the last resembles it in character, but is inferior to it in magnificence.

The surface of Unst, compared with that of the other Shetland Islands, is reckoned level; yet it has several extensive and moderately high hills. Valla Field, extending from the N end of the island to within $1\frac{1}{2}$ mile of its S end, and attaining a maximum altitude of 708 feet, runs along the western coast, presenting a powerful rampart against the tremendous onsets of the Atlantic, yet often washed over its summit and down to the skirts of its interior declivities by clouds of foam and spray. Saxa-Vord, 934 feet high, and the loftiest ground on the island, rises boldly up from the sea, in the centre of the N coast, and forms a landmark to mariners within a range of 14 leagues. Crossfield, at right angles with Valla Field, but rising apart from it, extends nearly across the middle of the island, and terminates on the E coast in two conical peaks. Vordhill extends $3\frac{1}{2}$ miles along the E coast S of Crossfield. Several other heights occur, but are inconsiderable in magnitude. The loftier hills are covered, to the depth of some feet, by such moss as forms good fuel; and the lower heights, once similarly covered, but now denuded of their moss, frequently show the bare rock, yet largely possess a green dry sward which yields excellent pasturage. A valley, immediately E of Valla Field, extends the whole length of the island, and has, from end to end, a chain of fresh-water lakes—the largest of which, the Loch of Cliff, is $2\frac{1}{2}$ miles long, and of pleasant appearance. Much of the soil of the island is excellent, and produces good crops. About 2000 acres are arable, and nearly an equal number of acres are excellent meadow and grasslands, which might easily be brought into tillage. Five-sixths of the whole area are in commonage, and might to a considerable extent be improved. Gneiss, serpentine, chlorite, slate, and diallage are the principal rocks of the island; and talcose and micaceous schists, primitive limestone, quartz, and hornblende also occur. Amianthus, asbestos, hydrate of magnesia, and chromate of iron, are the most noticeable minerals. The last occurs in considerable quantity, and is an object of much commercial value, on account of its yielding a fine yellow pigment used in the dyeing of silk, wool, linen, and cotton. Limestone is quarried and burnt as a manure. Fishing here, as throughout Shetland, forms the prime employment of the inhabitants. Shetland hosiery forms

the staple manufacture. A chain of the Scandinavian towers, called brochs or Pict's houses, extends round the island; stone circles and barrows are numerous; and on one of the cones of Crossfield were held the great courts of Shetland, previous to their removal to the vale of Tingwall. Though Unst has from time immemorial formed only one charge, the island is naturally divided into three districts, which are known as the North, Middle, and South parishes. Ruins or vestiges exist of upwards of 20 pre-Reformation places of worship; and three of these were, during part of the 18th century, occupied in regular rotation as parish churches, whilst six are still surrounded by graveyards. The Rev. James Ingram, D.D. (1776-1879), discharged parochial duty in Unst, first as Established and then as Free Church minister, from 1821 till within a few years of his death. Biot's and Kater's experiments at Bunes have been noticed in our article on SHETLAND. The parish of Unst, comprising the island of Unst and the above-named islands, is in the presbytery of Burravoe and the synod of Shetland; the living is worth £290. The church, near the head of Balta Sound, is a neat edifice, built in 1827 at a cost of £2000, and containing 1224 sittings; it was repaired and improved in 1890 at a cost of over £200. There is an Established mission church at the village of Baltasound. There are also two Free churches. Four public schools—Baltasound, Harolds Wick, Uyeasound, and Westing—with respective accommodation for 80, 81, 70, and 50 children, had (1893) an average attendance of 32, 44, 34, and 30, and grants of £32, 13s., £28, 18s. 6d., £25, 10s. 6d., and £29, 17s. Valuation of the parish (1884) £4178, 4s. 6d., (1893) £3810, 17s. 8d. Pop. of parish (1801) 2259, (1831) 2909, (1861) 3060, (1871) 2780, (1881) 2181, (1891) 2280, of whom 2269 were in Unst island.

Uphall, a village and a parish of S Linlithgowshire. The village stands on the left bank of the Brox Burn, $1\frac{1}{2}$ mile W by S of the town of Broxburn, and 7 furlongs N by W of Uphall station on the North British railway, this being $18\frac{1}{2}$ miles WSW of Edinburgh, and $5\frac{1}{2}$ E by N of Bathgate. It has a post office, with money order, savings bank, and telegraph departments, a public hall, a parish church hall, two inns, one of them once a well-known coaching stage. Pop. (1871) 360, (1881) 591, (1891) 922.

The parish, containing also the town of BROXBURN, originally was known as Strathbroke ('valley of the brook or badger'); and it took that name from the Burn of Brocks or Brooks' Burn, corrupted now into Brox Burn. It is bounded NE and E by Kirkliston, SE and S by Kirknewton and Midcalder in Edinburghshire, and W and NW by Livingston and Ecclesmachan. Its utmost length, from ENE to WSW, is $4\frac{1}{2}$ miles; its utmost width is $3\frac{1}{2}$ miles; and its area is 4561 $\frac{1}{2}$ acres, of which 20 $\frac{1}{2}$ are water. The ALMOND, near Amondell, flows $\frac{1}{2}$ mile north-north-eastward along all the Kirknewton border; and Brox Burn, which joins it some way lower down, takes an east-north-easterly course of $4\frac{1}{2}$ miles, partly along the boundaries with Ecclesmachan and Kirkliston, but mainly across the interior. The UNION CANAL, too, traverses the E of the parish for 2 $\frac{1}{2}$ miles, here making a westerly bend round the town of Broxburn. The parish is intersected from W to E by the road leading from Glasgow to Edinburgh. The surface is gently undulating, and at no point sinks much below 200, or much exceeds 400, feet above sea-level. The higher grounds, however, command magnificent views of the Lothians, to North Berwick Law and the Lammernuir. The rocks are carboniferous, belonging to the calciferous sandstone series, with intrusive patches of basalt. They include ooligenous shales, coal, many seams of valuable ironstone, excellent sandstone, limestone, marl, reddish coloured chalk, clay fit for the uses of the brickmaker and the potter, and some coarse fuller's earth. The manufacture of paraffin oil from the shales is a recent and important industry, and to this must be ascribed the extraordinary increase in the population. There are three extensive paraffin works in the parish—Broxburn; Uphall, amal-

gamated with Young's; and Holmes. There is also a bone manure manufactory at Broxburn. The soil on the lower grounds is a fine black loam, and elsewhere is mainly a fertile clay. Fully seven-eighths of the entire area are in tillage, and much of the remainder is under coppice or plantation. Mansions, noticed separately, are AMONDELL, HOUSTOUN, KIRKILL, and MIDDLETON HALL; and the Earl of Buchan owns more than half of the whole parish. Uphall is in the presbytery of Linlithgow and the synod of Lothian and Tweeddale; the living is worth £377. The parish church, containing 400 sittings, is partly of pre-Reformation date, and partly appears to have been built in the middle of the 17th century. The bell still in use is inscribed 'Campana Sancti Nicolai de Strathbroke, 1441;' and in the Buchan vault are buried the Hon. Harry Erskine (1746-1817) and his brother, Thomas, Lord Chancellor Erskine (1750-1828). The church being situated about half a mile from the village, a hall for Sabbath school and other purposes, and accommodating 300 persons, was erected there in 1893. Other places of worship are Broxburn Established chapel of ease (1884), Uphall or Broxburn Free church, Broxburn U.P. church (1880), Broxburn E.U. church, and Broxburn Roman Catholic church of SS. John Cantius and Nicholas (1881). Broxburn public, Uphall public, and Broxburn R.C. schools, with respective accommodation for 949, 283, and 317 children, had (1898) an average attendance of 947, 261, and 268, and grants of £828, 12s. 6d., £252, 15s., and £234, 10s. Pop. (1801) 786, (1831) 1254, (1861) 1507, (1871) 2772, (1881) 4812, (1891) 8653.—*Ord. Sur.*, sh. 32, 1757. See the Earl of Buchan's 'Account of the Parish of Uphall' in *Trans. Soc. Ants. Scotl.* (1796).

Uplawmoor or Ouplawmoor, a village in Neilston parish, Renfrewshire, at the foot of Loch Libo, $3\frac{1}{2}$ miles SW of Neilston town. It has a post and telegraph office under Glasgow.

Upper Keith. See HUMBIE.

Upper Largo. See ELIZABETH.

Upsetlington. See LADYKIRK.

Urchay. See ORCHY.

Urie, a mansion in Fetteresso parish, Kincardineshire, on the left bank of Cowie Water, 2 miles NNW of Stonehaven. It is an Elizabethan edifice of 1855, and the addition of a wing in 1883-84 at a cost of over £10,000 has made it the largest mansion in the county. The grounds are very extensive, including 700 acres within the walls in permanent pasture and 5 miles of picturesque drives within the gates. On the principal approach there is a high-level bridge over the Cowie, which cost upwards of £2000. The first known possessors of the estate were the Frasers, a family of renown in early Scottish history, whose chief was designated Thane of Cowie. Through the marriage of Margaret Fraser with Sir William Keith, it passed to the Marischal family. The barony of Urie, which then included the lands of Elsieck and Muchalls, was sold in 1415, along with other possessions, to William de Hay, Lord of Errol. It remained in the possession of the Hay family till 1647, when the estate of Urie was purchased by William, Earl Marischal, Elsieck and Muchalls having in the interval passed into other hands. In 1648 it was sold to Col. David Barclay, third son of Barclay of Mathers, the representative of the ancient De Berkeleys. Col. Barclay, 'having religiously abdicated the world in 1666 and joined the Quakers,' at his death in 1686 was succeeded by his son, Robert Barclay (1648-90), the famous Quaker apologist. His great-grandson and namesake (1751-97) in 1777 married the heiress of Allardice (see ARBUTHNOTT), and improved the estate, granting fens, from which the New Town of Stonehaven has arisen. His son, Capt. Rt. Barclay-Allardice (1779-1854), was famous as an agriculturist, and still more for his pedestrian feats, having in 1809 walked 1000 miles in 1000 consecutive hours. At his death the estate was purchased by the late Alex. Baird, Esq., ironmaster at Gartsherrie, who was succeeded in 1862 by his brother, John Baird, the father of the present laird, Alex. Baird, Esq. (b.

1849; suc. 1870). With the adjacent estate of RICKARTON, purchased in 1875, the lands extend to about 10,000 acres.—*Ord. Sur.*, sh. 67, 1871. See the Rev. D. G. Barron's *Court Book of Urie* (Scot. Hist. Soc. 1892).
Urie, The. See URV.

Urigill Loch, a troutful lake of Assynt parish, Sutherland, $1\frac{1}{2}$ mile SW of Altnakealgach Inn. Lying 515 feet above sea-level, it extends $1\frac{1}{2}$ mile north-eastward, varies in breadth between $2\frac{1}{2}$ and $5\frac{1}{2}$ furlongs, contains four islets, and sends off a stream $1\frac{1}{2}$ mile north-north-westward to Cam Loch.—*Ord. Sur.*, sh. 101, 1882.

Urquhart (oldest known form *Urquhard*; present form dating from the early part of 16th century; Gaelic form *Urchadwin*, but the derivation is uncertain), a coast parish, containing a village of the same name, in the NE of the county of Elgin. It is bounded NNE by the Spey Bay portion of the Moray Firth, E by the parish of Bellie, SE by the parish of Speymouth, and SW and W by the parishes of St Andrews-Lhanbryd and Drainie. Except for $2\frac{1}{2}$ miles at the NW corner, where the river Lossie forms the whole boundary from Arthur's Bridge at Inchbroom to the sea, along the NNE side, and at the mouth of the Spey, the boundary line is almost entirely artificial. In shape the parish is triangular—one side lying along the coast from the mouth of the Lossie to the mouth of the Spey; another from the mouth of the Lossie in an irregular line south-eastward to the point on the extreme S where the parishes of Speymouth and St Andrews meet; and the shortest side from this point in an irregular line north-eastward to near the mouth of the Spey. The first side measures $7\frac{1}{2}$, the second $8\frac{1}{2}$, and the third $5\frac{1}{2}$ miles, all in straight lines; and the area is 13,660·765 acres, of which 70·988 are water, 501·810 foreshore, and 22·174 tidal water. The coast is low and sandy, and rising from the sand are a series of bent-covered hillocks and pebble beaches, the peculiar features of which have been already noticed under ELGINSHIRE. Part of these to the NW, extending over an area of from 2 to 3 square miles, and covered with heathy scrub, forms a flat tract very little above sea-level, and known as the Links of Innes. The rest of the surface is undulating, but nowhere reaches any great height, the highest point being the Bin Hill or Black Hill of Moray (223 feet), close to the sea coast W of Garmouth. The small Loch of Cotts (400 × 200 yards) was at one time much larger, but has been reduced by drainage. In the NW the drainage is carried off to the Lossie by means of the Innes Canal, and elsewhere by small streamlets to the Spey or the sea. Much of the surface is well wooded, but more than half is under cultivation, though towards the NW there is a good deal waste. The soil is light and sandy, but kindly, and the climate is early and warm. The underlying rocks are Old Red Sandstone, but the beds are deeply covered by alluvial deposits, and mixed with the soil and clay there are in many parts large numbers of small fragments of rocks belonging to different beds of Jurassic age. There is a well-preserved though small stone circle on the farm of Viewfield, N of the village, and on the side of the road leading from it to the E gate of Innes House; and at many points cists and flint and stone implements of neolithic age have been found, as well as some fine gold armlets. A particularly large and interesting find of these was made in 1870 on the farm of Meft near the SW border. The place seemed to be an abandoned manufactory of flint implements. All the best of the specimens found are now in the Antiquarian Museum in Edinburgh, and an interesting account of some of them and of all the pre-historic antiquities of the parish will be found in a paper by the Rev. James Morrison in the *Proceedings of the Society of Antiquaries of Scotland* for 1871. It seems to have been in this parish that Malcolm IV. defeated the Mormaer of Moray and his followers in 1160, when the lands of Innes between Lossie and Spey were granted to Bereowald of Flanders, and large settlements of 'peaceful' Flemings introduced. Prior to this David I. had attempted to introduce civilisation among the Celtic

natives of the district, by the foundation of a priory, which stood on low ground to the ENE of the village. No remains of the buildings have existed since 1654, when the material was carried off and used for the construction of a granary at Garmouth and the repair of the manse and churchyard wall. The site can still be traced. Founded in 1125, the priory was a cell of Dunfermline Abbey, the Benedictines who were its first inmates coming from Canterbury. It was united to Plascarden by a bull of Pope Nicholas V. in 1453, and the buildings seem thereafter to have fallen into decay. In 1866 some oak beams and a curious bronze vessel were found on the site. The former are in the Elgin Museum, and the latter is at Duff House. The possessions of the priory were extensive, and included the lordship of Urquhart, Fochabers, lands in Durris, Auldearn, and Dalcross, and fishings on the Spey. The S and E parts of the parish were in 1591 erected into a temporal lordship in favour of Alexander Seton, Commendator of Pluscarden, Baron Urquhart, afterwards Earl of Dunfermline. They were purchased by the Duke of Gordon in 1730, and in 1777 passed by exambion to the Earl of Fife, who had acquired the estate of Innes in 1767. An old ruined church, dedicated to St Margaret, wife of Malcolm Ceanmor, which stood at the village, is said to have been pulled down and the materials used in the construction of the present Free and Established churches in 1844. The village of Urquhart, in the SW, $1\frac{1}{2}$ mile NE of Lhanbryd station, is a small place, occupied mostly by crofters and labourers. The parish, which contains also the villages of KINGSTON and GARMOUTH at the mouth of the Spey, is traversed for $1\frac{1}{2}$ mile on the S by the Forres and Keith section of the Highland railway, and for 4 miles near the centre by the Elgin and Buckie section of the Great North of Scotland railway, with stations at Urquhart village and Garmouth, the former 5 and the latter 8 miles E by N of Elgin; and there are a number of good district roads. The parish is in the presbytery of Elgin and the synod of Moray, and the living is worth £299 a year. The villages of Garmouth and Kingston, though in the civil parish, are *quoad sacra* in the parish of Speymouth. The parish church, on high ground to the N of the village, is a good building, with a high square tower, erected in 1844 and reset in 1878. There are Free churches at the village and at Garmouth. Under the School Board, the Urquhart public school and Leuchars school, with respective accommodation for 242 and 34 pupils, had in 1898 an attendance of 126 and 16, and grants of £128, 2s. 3d. and £28, 5s. 10d. The school at Garmouth is under the Speymouth School Board. The largest proprietor is the Duke of Fife. Mansions are INNES HOUSE and Leuchars House. Pop. (1801) 1023, (1831) 1019, (1861) 2532, (1871) 2368, (1881) 2139, (1891) 1917, of whom 1081 were in the ecclesiastical parish.—*Ord. Sur.*, sh. 95, 1876.

Urquhart and Glenmoriston, a large parish of Inverness-shire. It is bounded N by the parishes of Kiltarlity and Inverness, SE along the centre of Loch Ness by the parishes of Dores and Boleskine, S by Boleskine and Kilmonivaig, W by Ross and Cromarty and the parish of Kilmorack, and NW by the parish of Kiltarlity. The boundary is largely natural. From the NE corner, 2 miles NE of Temple Pier on Urquhart Bay on Loch Ness, the boundary line passes south-westward along the centre of Loch Ness to the mouth of the river Moriston, and, after following up the course of that river for $4\frac{1}{2}$ miles, it strikes up a small stream south and south-eastward to the watershed, first between the river Moriston and the river Oich, and then between Glen Moriston and Glen Garry. The chief heights here are Ceanan a Mhain (2203 feet), Meall Dubh (2581), Clach Criche (2211), and Meall Leac Ulaidh (1760). From the latter hill the line follows the Riabhach Burn to Loch Loyne (760 feet), passes up the centre of Loch Loyne till near the upper end, and thence follows the county boundary across Loch Clunie (606), and on as far as Sgurr nan Conbhairan (3634). From this hill it strikes first northward and then E by N along

the line of watershed between Glen Affric and Glen Moriston by Tigh More (3222 feet), Aonach Shasuinn (2901), Carn a Choire Bhuidhe (2778), Carn a Chaochain (2314), and Carn a Choire Leith (2118), from the last of which it strikes down across the centre of Loch na Beinne Baine, up a small burn entering it on the E side, and thence round the high ground E of Loch nan Eun to the Allt nam Faogach near Loch nam Faogach, follows this stream downwards for $1\frac{1}{2}$ mile, and then strikes northward to the burn that rises between Carn Bingly (1273) and Meall a' Choire (1000). It follows this burn downward to its junction with the Enrick near Corriemony, and then the Enrick for a short distance to a point 1 mile W of Loch Meiklie (372 feet), where it again turns off first to the N up to the watershed between the basin of the river Beaully and that of Loch Ness, and then along this watershed by Meall nan Caorich (1401) and Meall Gorm (1355), whence it winds first N, then S, and finally E back to the starting point on Loch Ness. The greatest length of the parish, from this point south-westward to Sgurr nan Conbhairan, is a little over 23 miles; the average breadth at right angles to this is about 8 miles; and the area is 129,204·673 acres, of which 6500·092 are water. The whole parish may be said to consist of the two glens, Glen Urquhart and Glen Moriston, of which the latter is separately noticed. From the SE border along Loch Ness the ground rises steeply, and attains its greatest height at the well-known Meall Fuar-mhonaidh (Meall Fuarvounie; 2234 feet) midway between Glen Urquhart and Glen Moriston, with Glasbheinn Mhor (2000), Carn na Fiaicall (1913), Carn Tarsuinn (2000), and Meall na Criche (2224) stretching away to the W from it. The heights on the outside of the glens have been already given in describing the boundary line. Scattered all over the parish, especially N of the middle and lower parts of Glen Moriston, are a large number of lakes and lochans, of which the chief, besides those already mentioned, are Loch nam Deirisdan (1750 feet; 3×1 furl.), Loch na Ruighe Duibhe (1600) about twice the size, and Loch nam Meur (1580), also about twice the size, all on the Allt Seanabhaila, a tributary of the Enrick; another Loch nam Meur (1573; 4×3 furl.) and Loch Aslaich (1360; 3×1 furl.), both on the upper waters of the Coiltie; Loch nam Breac Dearga (1500; $5 \times 1\frac{1}{2}$ furl.) W of Meall Fuar-mhonaidh, and a large chain of lakes to the W, all draining to the Allt Sigh flowing to Loch Ness; and Loch na Criche (1667; $1\frac{1}{2} \times \frac{1}{2}$ mile), Loch an Staca (1604; 8×3 furl.), and Loch Liath (1500; 3×2 furl.), all on two tributaries of the river Moriston. The drainage is carried off by the Enrick, the Coiltie, and the Moriston, with their tributaries, as well as by a number of smaller burns flowing direct to Loch Ness. There is good fishing in almost all the streams and lakes. The heights are rocky and bold, and some of the scenery is remarkably pretty and picturesque. The falls of DIVACH on a tributary of the Coiltie are well known. The bank of Loch Ness, Glen Urquhart, with the lesser hollow of the Coiltie, and Glen Moriston are all well-wooded, but the rest of the parish is rock and bleak moor. The arable land is confined to some narrow slopes along Loch Ness and the two glens. The soil along Glen Urquhart is a good loam, which, though somewhat stony and not very deep, is fertile; that in Glen Moriston is much lighter and sandier, and not very productive, being mostly given up to pasture. The underlying rocks are metamorphosed Lower Silurian beds of mica schist, gneiss, crystalline limestones, and serpentine, except along the shore of Loch Ness from the NE corner of the parish to beyond Meall Fuar-mhonaidh, where a patch of Old Red Conglomerate comes in. In the lower part of Glen Urquhart a large number of minerals are to be found. (See INVERNESS-SHIRE.) To what has been said of Glen Moriston in the separate notice it remains here but to add that it afforded shelter to Prince Charles Edward Stuart on 23 and 24 July 1746, and again on 11 and 12 August. On 24 July he was joined in the cave in which he was concealed by six faithful men of Glen

Moriston, who continued with him as guides and guards till the 19th of the following month, when they were dismissed at Loch Arkaig a few days before the Prince set out for Badenoch to meet Lochiel. Glen Urquhart spreads out round Urquhart Bay in a fine semicircular flat well-wooded and cultivated, and both above and below Drumnadrochit—1 mile up the river Enrick from the Bay—but especially above, is a considerable amount of excellent haughland. Above this is a narrow rocky glen, beyond which there is a good soil round Loch Meiklie, and again farther up the Glen at Corriemoney. The whole length of the Glen, from Urquhart Bay to Corriemoney, is 9 miles. In the moorland districts there is excellent shooting, and of the whole area over 90,000 acres are set apart as deer forests, the chief being Balmacraan S of the upper part of Glen Urquhart, Ceannacroc at the head of Glen Moriston on the N side, Invermoriston at the mouth of the Glen on the N side, and Portclair at the mouth of Glen Moriston on the S side. The principal prehistoric antiquities are cairns, stone circles, and cup-marked stones and rocks. Culdee times are marked by a number of old burying-grounds associated with the names of various saints, while near Temple Pier was a small religious house belonging to the Knights Templars. The principal object of antiquarian interest now, however, is Urquhart Castle on the point called Strone on the S side of Urquhart Bay. The ruins of the castle occupy a boss of sandstone rock measuring about 600 feet from N to S, and 200 feet from E to W, the irregular rectangular form of which is followed by the walls. This is separated from the rising ground behind by a moat some 16 feet wide and 30 feet deep, but probably at one time much deeper. Whether this was ever filled with water is doubtful, as it is a considerable distance above the level of Loch Ness, and there is no appearance of any spring or stream that could have supplied the water. It was, however, spanned by a drawbridge leading to the principal entrance, consisting of an archway for a portcullis flanked by projecting towers. Within this is the guardroom, and beyond is the courtyard. The oldest portion of the castle seems to be to the N and E, and at the extreme N end is the most prominent part of the whole—the great keep 50 feet high, and 34 by 29 feet on the outside, with walls 8 feet thick. It consisted of basement vaulted chambers, three storeys which seem to have had wooden joists, and a fourth top storey which seems to have been vaulted. In the wall is a wheel staircase, and at each corner of the building was a square turret. This portion of the structure seems to date from the middle of the 13th century. There is traditional account, no doubt true, of a much earlier stronghold, but there must certainly have been here one of the strengths of Gillespie Macscoulane, who was defeated and put to death during a rebellion in the north in 1229, after which the lands of Urquhart and Boleskine, which had been claimed by him, were granted to Sir Thomas Dorward, who was succeeded by his son, Sir Allan Hostiarus. Shortly after the death of the latter, whose heirs were three daughters, the castle passed into the possession of the Cumins of Badenoch, who seem to have held it till the beginning of the great War of Independence, when a detachment of Edward's army occupied it, Sir John Fitzwarrenne being appointed governor. During the first struggle against English usurpation, under Sir William Wallace, it was besieged and captured by Sir Andrew Moray, younger of Petty, and remained in the hands of the national party till 1304, when it again passed into possession of the English after a long siege, in which the additions to the fortifications ordered by Edward in 1297 were the chief means of its prolonged resistance. These additions probably included the flanking towers at the gateway and the bastioned curtain walls. The castle was one of the few Scottish strengths that successfully resisted Edward Baliol's party after the death of Robert Bruce. In 1336 we find it in charge of Richard Cumin, but it was a royal castle, and as such was granted in 1359 to William, Earl of Sutherland, and again in 1371 to David, Earl of

Strathearn, son of Robert II., whom failing, to Alexander, Wolf of Badenoch. The castle was, however, in 1398, placed by parliament under charge of a governor appointed by them, and in the Chamberlains Rolls for 1428-29 are records of sums expended on repairs, and from entries in 1448-50 we learn that the fabric and garrison seem to have been under the charge of the Thane of Cawdor. It was seized by the Earl of Ross during the rebellion of 1451; but notwithstanding an Act of Parliament of date 1455, annexing the castle and barony 'to the Crowne perpetually to remane, the quihilk may not be giffyn away,' it was again granted by the king to the Earl of Ross, on whose forfeiture it once more returned to the crown. In 1475 it was granted to Hugh Rose of Kilravock, but towards the close of the century it was given to the Grants who had distinguished themselves on the royal side against Donald Dubh, Lord of the Isles. This clan had to fight for their hold, but they prevailed, and in 1509 a charter in favour of Grant of Freuchie was signed by the king, and in the possession of the Seafeld Grants the barony and castle still remain. The destruction of the roof and woodwork seems to have taken place early in the 18th century. One vault is said to contain the plague, which was somehow buried there, and another a concealed treasure. See a long article in the *Builder* for 17 Feb. 1872.

The parish is traversed by a good road along the shore of Loch Ness; by another up Glen Urquhart and across to Strath Glass, which is reached at Glengaffric Hotel at the mouth of the river Cannich; and by another up Glen Moriston, which continues by Glen Clunie to Invershiel and Kintail at the head of Loch Duich. The villages are Lewistown at the Established church, and Millton farther NW at the Free church. The parish is made up of the old parishes of Urquhart and Glenmoriston, which were united at or shortly after the Reformation. The latter was formerly joined to Abergarriff. Urquhart and Glenmoriston is in the presbytery of Inverness and synod of Moray, and the living is worth £296 a year. The parish church is near the mouth of Glen Urquhart, about a mile from Urquhart Bay. It was built in 1836 in place of a previous church of 1630, and contains 850 sittings; and there is a church at Glen Moriston, which was raised to *quoad sacra* status in 1890. There are Free churches at Glen Urquhart and at Glen Moriston, and there is also an Episcopal mission station (St Ninians). There are at Glen Urquhart a branch of the Caledonian Bank, a farmers' club, cricket and bowling clubs, and a branch of the National Bible Society. Under the School Board are Balmaln, Bunloit, Dalchreichard, and Glen Urquhart schools, and joint schools at Corriemoney and Invermoriston, which, with accommodation for 97, 60, 63, 233, 32, and 55 pupils respectively, had in 1893 attendances of 36, 22, 24, 138, 20, and 49, and grants of £46, 16s., £37, 17s. 6d., £44, 16s., £169, 3s., £33, 5s., and £75, 6s. 6d. The chief proprietors are the Dowager-Countess of Seafeld, J. M. Grant of Invermoriston, L. A. Macpherson of Corriemoney, and A. D. Campbell of Lakefield. The mansions are Balmacraan, Corriemoney, Invermoriston House, Lakefield House, and Lochlether House. Pop. (1801) 2633, (1831) 2942, (1861) 2911, (1871) 2780, (1881) 2438, (1891) 2040.—*Ord. Sur.*, shs. 73, 72, 83, 1878-81.

Urquhart and Logie Wester, a parish in the Black Isle section of Ross and Cromarty. It is bounded NE by the parish of Resolis, E by the parishes of Avoch and Kilmuir Wester; SE by the parish of Killearnan; S and SW by the parish of Urray; and W and NW by the parish of Fodderty and the Cromarty Firth. All along the W side the boundary follows the course of the river Conan and the Cromarty Firth, but elsewhere it is almost entirely artificial. The extreme length, from NE to SW, parallel to the Cromarty Firth, is a little over 8½ miles; the average breadth at right angles is about 2½ miles; and the total area is 14,999·722 acres, of which 125·429 are water and 1293·511 foreshore. Of this area 6385 acres belong to the barony of

FERINTOSH, which up to 1891 formed a detached part of the county of Nairn, but in that year was transferred by the Boundary Commissioners to the county of Ross and Cromarty. The surface rises pretty regularly from the Conan and the Cromarty Firth south-eastward to the boundary line, which runs partly along ARDMEANCH or the Mullbuie ridge of the Black Isle, along which it reaches a height of 627 feet. The higher grounds command magnificent views of the upper reaches of the Cromarty Firth. The slope is cut across by ravines formed by a number of small burns, which carry off the drainage to the river Conan or direct to the Cromarty Firth. The soil of the lower grounds is good but light loam, but in the higher portions it is poorer, though all districts produce excellent crops of barley and oats. Along the coast there are large farms, but the higher ground is given up to small holdings and crofts, the tenants of these having reclaimed and improved a large extent of land formerly waste. There is still some moorland, but more than half the area is under the plough, and the great proportion of the rest pasture, there being very little under wood. The underlying rocks are Old Red Sandstone. The barony of Ferintosh, belonging to the family of Forbes of Culloden, and Kinkell Castle have both been separately noticed. The parish is traversed along the centre and NW by main roads from Cromarty to Dingwall, with a branch running up the valley of the Conan. The extreme W corner is crossed for 2½ miles by the Inverness and Dingwall section of the HIGHLAND RAILWAY, on which is Conan station, 16½ miles NW of Inverness and 2 S of Dingwall. The only village is Conan Bridge, but there are hamlets at Culbockie, Duncanston, and Newton of Ferintosh. The mansions are Conan House and Rye-field. This parish, formed by the union of the parishes of Urquhart (NE) and Logie Wester (SW) as early as 1490, is in the presbytery of Dingwall and synod of Ross, and the living is worth £362 a year. The parish church, near the centre, on the coast side, was built in 1795, renovated in 1894, and contains about 1000 sittings; and there is also a Free church. Under the School Board Conan, Culbockie, Ferintosh, and Mullbuie schools, with accommodation for 125, 134, 155, and 95 pupils respectively, had in 1893 attendances of 69, 118, 55, and 77, and grants of £84, 13s. 6d., £150, 4s. 8d., £54, 15s., and £100, 15s. 7d. The principal proprietors are D. Forbes, Esq. of Culloden and Sir K. S. Mackenzie, Bart. of Gairloch. Pop. (1801) 2820, (1831) 2864, (1861) 3147, (1871) 2863, (1881) 2525, (1891) 2325.—*Ord. Sur.*, shs. 83, 93, 1881.

URR, a Kirkcudbrightshire parish, towards the S containing the town and station of DALBEATTIE, 14½ miles SW of Dumfries and 5½ ESE of Castle-Douglas. It is bounded NE by Kirkpatrick-Irongray and Lochrutton, E by Kirkgunzeon, SE by Colvend, SW by Buittle and Crossmichael, and NW by Kirkpatrick-Durham. Its utmost length, from N by W to S by E, is 12½ miles; its breadth varies between 4½ furlongs and 3 miles; and its area is 24½ square miles or 15,730½ acres, of which 41½ are foreshore and 263½ water. URR WATER winds 10½ miles south-south-eastward along all the Crossmichael and Buittle boundary, though the point where it first touches and that where it quits the parish are only 7½ miles distant as the crow flies. Kirkgunzeon Lane or Dalbeattie Burn, after flowing 2½ miles southward along the Kirkgunzeon border, winds 2 miles westward and south-south-westward across the interior, till it falls into the Urr at a point ½ mile SSW of Dalbeattie. Three lakes are Edingham Loch (1¼×½ furl.), 1½ mile N by E of Dalbeattie; MILTON Loch (6×3½ furl.; 420 feet), in the northern interior; and ACHENRECH Loch (9×1½ furl.; 340 feet), on the Kirkpatrick-Durham boundary. In the S the surface declines to less than 50 feet above the sea, and thence it rises northward to 408 feet at Little Firth-head, 500 at Barr Hill, 668 near Meikle Auchenreoch, and 900 at Larganlee Hill, so that Urr, compared with other Kirkcudbrightshire parishes, is pretty low and level. Granite, in places protruding at the surface, is the

predominant rock; and limestone occurs, but is very hard, and little suited for economical purposes. Coal is supposed to exist in the hills to the N, but only in small quantity; iron ore is plentiful, but cannot be worked for want of cheap fuel; and shell-marl abounds, but has long ceased to be used as a manure. The soil, except on some mossy land in the S, and in some moorish land in the N, and at the protrusions of granite, is generally light and fertile. The proportion of arable land to that which cannot be ploughed is 12 to 1; and about 800 acres are under wood. A remarkable artificial mound, the Moat of Urr, stands on the right bank of Urr Water, 2½ miles NNW of Dalbeattie. It rises in successive concentric terraces, with a diameter and a height unexcelled by those of any other ancient moat in Scotland; was formerly surrounded by works of different construction from its own, and by Dr Skene is regarded as marking the site of Carbantorigum, a town of the Selgova mentioned by Ptolemy. A standing-stone, consisting of a rude block of granite, is in a field 1 mile to the E of the moat; and bronze vessels and Roman coins have been found at various times and in different places. Pre-Reformation chapels were in several places, and one of them has left to its site the name of Chapelton. In the extreme N is a tombstone over the grave of four Covenanters; and the fanatical sect of Buchanites, after their flight from Ayrshire, resided for a time at Auchengibbert, from whence they removed to Crockettford. SPOTTES, noticed separately, is the chief mansion. Giving off the *quoad sacra* parish of DALBEATTIE, Urr is in the presbytery and synod of Dumfries; the living is worth £300. The parish church, near Haugh of Urr, and ¾ miles NNW of Dalbeattie, was built in 1815, and repaired and re-seated in 1894 at a cost of about £500. Besides those noticed under Dalbeattie, four public schools—Crocketford, Hargate, Milton, and Springholm—with respective accommodation for 96, 130, 72, and 70 children, had (1893) an average attendance of 52, 92, 35, and 26, and grants of £51, 14s. 6d., £90, 17s., £39, 11s., and £20, 15s. Pop. (1801) 1719, (1831) 3093, (1861) 3585, (1871) 4606, (1881) 5490, (1891) 4589, of whom 1241 were in Urr ecclesiastical parish.—*Ord. Sur.*, shs. 5, 9, 1857-63.

Urrard House, a mansion in Moulin parish, Perthshire, near the left bank of the Garry, 2½ miles SE of Blair Athole.

URRAY, a parish in Ross and Cromarty, containing a hamlet of the same name. It is bounded N by the parish of Contin, NE by the parish of Urquhart and Logie Wester, E by the parish of Killearnan, S by the parish of Kilmorack, SW by the parish of Lochalsh, and W by the parish of Lochcarron. It is about 30 miles long, and its breadth from 1½ to 7½ miles. Prior to 1891 part of it, comprising 382 acres, was also in Inverness-shire. This the Boundary Commissioners transferred to the Inverness-shire parish of Kilmorack. The parish had likewise two detached parts, one of which, situated at Altdearg and comprising 2463 acres, was transferred to the parish of Contin. The other detached portion was united to the main portion by there being transferred to the parish the intervening portions of the parishes of Contin and Fodderty lying south of the watershed between Strath Conan and Glen Orrin. There was also added to Urray part of the parish of Kilmorack situated at Tomich, and comprising 466 acres. The straths of the Conan and Orrin are well wooded, and in some places well cultivated, and the views along the former are in many places very picturesque. The soil in some parts of the straths is a good carse clay, and elsewhere stony sand, passing to gravel; but on the lower slopes it is warm and dry, and under good management produces fair crops. The underlying rocks are chiefly metamorphosed Lower Silurian beds, but on the E they are Old Red Sandstone. The drainage is carried off on the N by the Conan, which forms part of the northern boundary, and in the S by the Orrin. A tract of good land at the junction of the Orrin and the Conan was greatly improved by drainage

operations carried out in 1869. A reach of the Highland railway passes through the E side of the parish for 2 miles northward from Muir of Ord station; and access to the eastern part of the parish may be had from that point, or from Conan station in the parish of Urquhart. Near MUIR OF ORD station the Black Isle branch (opened 1894) of the same railway system breaks off for Fortrose. The great road from Inverness by Dingwall to the N runs alongside the railway; good roads branch off it up all the straths; and there are also a number of good cross and district roads. Besides farming and sheep-farming, the only industries are the salmon-fishing in the Conan. The mansions are Brahan Castle, Highfield House, Muirton House, Ord House, and Tarradale House—the wooded policies round the first being so fine and extensive as to form a prominent feature in the scenery along the lower part of Strath Conan. The only object of antiquarian interest is the ruined square tower of FAIRBURN. Tarradale was the birthplace of the celebrated geologist, Sir Roderick Impey Murchison, Bart. (1792-1871). The parish is composed of the old parishes of Urray and Kilchrist, of which the latter is separately noticed. In the presbytery of Dingwall and synod of Ross, it gives off part of its civil territory to the *quoad sacra* parishes of CARNOCH and Kinlochlichart; and the living is worth £330 a year. The parish church, near the mouth of the Orrin, is old; and there is a Free church at Muir of Ord, and a small Episcopal church at Highfield. In 1890 the ecclesiastical buildings of the parish were repaired at the expense of the minister, and in 1893 a new cemetery was formed around the parish church at a cost of £350. Under the School Board the Marybank and Tarradale schools, with accommodation for 120 and 180 pupils respectively, had in 1893 attendances of 113 and 137, and grants of £134, 18s. 6d. and £155, 4s. 6d. The chief landowner is John Stirling, Esq. of Fairburn. Pop. (1801) 2083, (1831) 2768, (1861) 2355, (1871) 2308, (1881) 2427, (1891) 2153, of whom 1108 were females.—*Ord. Sur.*, shs. 81, 82, 1881-82.

Urr, Bridge of, a hamlet in Kirkpatrick-Durham parish, Kirkcudbrightshire, on the left bank of Urr Water, 4 miles N by E of Castle-Douglas.

Urr, Haugh of. See HAUGH OF URR.

Urr Water, a river of Kirkcudbrightshire, issuing from bleak Loch Urr (5 × 4 furl; 680 feet), at the meeting-

point of Glencairn, Dunscore, and Balmaclellan parishes, and flowing 27½ miles south-by-eastward along the boundaries of Dunscore, Balmaclellan, Kirkpatrick-Durham, Parton, Crossmichael, Urr, Buittle, and Colvend, till it falls into the Solway Firth near the little island of Hestan, midway between the Nith and the Dee. Its tributaries are numerous, but, excepting Kirkgunzeon Lane or Dalbeattie Burn, they are all individually inconsiderable. About 4½ miles before losing itself in the Solway, it begins to expand into an estuary, which, with a maximum breadth of 1½ mile, embosoms Rough Island. The Urr is naturally navigable for considerable craft 3 miles above its incipient expansion, or 7½ above its embouchure, and could easily, at small expense, be deepened over this distance, and rendered navigable higher up. It affords good sea-trout and fairish river-trout fishing; whilst salmon are caught in considerable quantities in wet summers; but in dry seasons sea-fish can get but little higher than the flow of the tide. For a number of miles after issuing from Loch Urr, it holds its course through a wild country and over an irregular channel; but it eventually begins to show some strips of level and fertile ground upon its banks; and from the point where it begins to run along the margin of the parish of Urr, it pursues its way among increasingly level and cultivated grounds.—*Ord. Sur.*, shs. 9, 5, 1863-57.

Ury, a troutful stream of Aberdeenshire, rising 4½ miles SSE of Huntly, and winding 19½ south-eastward through or along the boundaries of Gartly, Drumblade, Insh, Forgue, Culsalmond, Oyne, Rayne, Chapel-of-Garioch, Keithhall, and Inverurie parishes, till it falls into the Don a little below the town of Inverurie.—*Ord. Sur.*, shs. 86, 76, 1876-74.

Ury. See URR.

Ushenish, a headland on the E coast of South Uist island, Outer Hebrides, Inverness-shire. A lighthouse, built on it in 1857 at a cost of £8809, and altered in 1885, shows an occulting light visible at a distance of 18 nautical miles.

Ussie, Loch. See FODDERTY.

Uyea, an island of Unst parish, Shetland, ½ mile S of Unst island, from which it is separated by Uyea and Skuda Sounds. With an utmost length and breadth of 1½ and 1 mile, it rises to a height of 183 feet. Pop. (1841) 23, (1871) 9, (1881) 5, (1891) 8.

V

VAILA, an island of Walls parish, Shetland, in the mouth of Vaila Sound, within ½ mile of the nearest point of the Mainland. It has an utmost length and breadth of 1½ and 1½ mile. Vaila Sound, running up to the vicinity of Walls church, is well sheltered, and forms an excellent natural harbour. Pop. of island (1841) 29, (1881) 9, (1891) 19.

Valley, an island of North Uist parish, Outer Hebrides, Inverness-shire, separated from the NW side of North Uist island only by a narrow sound, dry at low water. It measures 2½ miles in length from ENE to WSW, and 3 furlongs in mean breadth; and has a light, sandy, fertile soil. Pop. (1841) 59, (1861) 56, (1871) 43, (1881) 29, (1891) 34.

Valleyfield. See PENICUIK.

Valleyfield House, a handsome and commodious mansion, with beautiful grounds, in Culross parish, Fife, 1½ mile ENE of Culross town. Its owner is Robert Wm. P. C. Campbell-Preston, Esq. of Valleyfield and Ardchattan (b. 1865; -suc. 1870), who succeeded to the Ardchattan estate in 1873 on the death of his cousin, Mrs Popham, when the name Campbell was prefixed to that of Preston.—*Ord. Sur.*, sh. 39, 1869.

Valleyfield, Low, a village in Culross parish, Fife. Low Valleyfield House here belongs to Major Thomas Muir.

Valtos, a village, with a public school, on the E coast of Kilmuir parish, Isle of Skye, Inverness-shire, 13½ miles N by E of Portree. It was the scene of a great disturbance on 30 Jan. 1885 in connection with the agitation which resulted in the appointment of the Crofters' Commission, and in the subsequent improvement in their lot.

Valtos, a village, with a public school, in Uig parish, Lewis, Ross and Cromarty, on the SW shore of salt-water Loch Roag, 34 miles W of Stornoway. Pop. (1871) 310, (1881) 332, (1891) 407.

Varrich Castle. See TONGUE.

Vat, a cave and a burn in Glenmuick parish, Aberdeenshire. The cave, opening vertically, and shaped somewhat like a vat, was a retreat of the famous free-booter Gilderoy. The burn traverses the cave, augmenting its romantic appearance, and passes into the W end of Loch Kinord.

Vaternish or Waternish. See DUBRINISH.

Vatersay or Watersay, an island of Barra parish, Outer Hebrides, Inverness-shire, immediately S of Barra island, and 11 miles N by W of Barra Head. It is separated from Barra island by Vatersay Sound, studded with islets, and so narrow in one part as to afford passage to only small boats; and from Fladda and Sandaray islands, on the S, it is separated by the Sound of

Sanderay, $\frac{3}{4}$ mile broad. It measures, at extreme points, 3 miles from E to W and $2\frac{1}{2}$ from N to S, but is so deeply indented by the sea as to possess an area of not more than 3·9 square miles, being almost bisected near the middle by two bays on opposite sides, one of them forming an excellent natural harbour. It chiefly consists of two hills and a low sandy intervening isthmus; commands from its hills a comprehensive and picturesque view of the entire southern group of the Outer Hebrides; rests on a basis of gneiss rock; and undergoes constant change of surface, from shiftings, accumulations, and dispersions of drift sand. Pop. (1841) 84, (1861) 82, (1871) 23, (1881) 19, (1891) 32.

Vatsker, a village in Stornoway parish, Outer Hebrides, Ross and Cromarty, on the W coast of Broad Bay, 7 miles NNE of Stornoway town. Pop. (1861) 316, (1871) 376, (1881) 396, (1891) 439.

Veatie, Loch. See VEXATIE.

Vementry, an island of Sandsting parish, Shetland, on the S side of St Magnus Bay, within 1 furlong of the nearest point of the Mainland, and $3\frac{1}{2}$ miles E of Papa Stour. It has an utmost length and breadth of $2\frac{1}{2}$ and $1\frac{1}{2}$ miles; is deeply indented by the sea; contains five little fresh-water lakes; attains a height of 297 feet; and is heathy on the W, verdant on the E, affording good pasture for sheep and black cattle.

Venlaw, a mansion in Peebles parish, Peebleshire, $\frac{1}{2}$ mile N of the town. Built about 1782, it occupies the site of the castle of Smithfield, which, appearing on record as early as the middle of the 14th century, belonged successively to the Dikesones and the Hays. The present proprietor is Admiral Jas. Elphinstone Erskine, R.N.—*Ord. Sur.*, sh. 24, 1864.

Vennachar, Loch, a lake on the mutual border of Callander, Aberfoyle, and Port of Monteith parishes, Perthshire. Formed by expansion of the southern head-stream of the TERT, and lying 270 feet above sea-level, it extends $3\frac{1}{2}$ miles east-by-northward to within $2\frac{1}{2}$ miles of the town of Callander; and has a maximum breadth of $5\frac{1}{2}$ furlongs. The picturesque valley in

which it lies has been rendered famous as the main scene of Scott's *Lady of the Lake*; and it takes its name, signifying 'the lake of the fair valley,' from the loveliness of its environments, having a beautiful sinuous cincture, charmingly wooded shores, and finely graduated flanks, overlooked in the distance by grandly imposing mountains. Its upper reaches are very fine; and at its outlet, at COILANTOGLE Ford, are located storage embankments connected with the Glasgow waterworks. A wooded bank on the N shore bears the name of Coillebhròine ('wood of lamentation'), from a legend of a malignant water-kelpie; and on the S shore stands the mansion of INVERTROSSACHS, which was occupied by the Queen in 1869. Its waters contain some salmon, very fine trout, perch, and large pike.—*Ord. Sur.*, sh. 38, 1871.

Veyatie, Loch, a lake on the mutual border of Assynt parish, Sutherland, and Lochbroom parish, Ross and Cromarty, $4\frac{1}{2}$ miles WNW of Altnakealgach inn. Lying 366 feet above sea-level, it extends 4 miles north-westward, varies in breadth between 1 and $3\frac{1}{2}$ furlongs, contains salmo-ferox and plenty of fine trout, at its head receives a stream flowing $\frac{1}{2}$ mile from Cama Loch, and sends off another 9 furlongs west-north-westward to Fearn or Fionn Loch.—*Ord. Sur.*, sh. 101, 1882.

Vigeans, St. See ST VIGEANS.

Vogrie, a plain mansion of recent erection in Borthwick parish, Edinburghshire, near the left bank of Tyne Water, 5 miles SE of Dalkeith. Its owner is James Cumming Dewar, Esq. (b. 1857; suc. 1880), whose family acquired the estate about the beginning of the 18th century.—*Ord. Sur.*, sh. 32, 1857.

Voil, Loch, a beautiful lake in Balquhider parish, Perthshire, $3\frac{1}{2}$ miles W by S of Lochearnhead station. An expansion of the river Balvag, and lying 414 feet above sea-level, it extends $3\frac{1}{2}$ miles east-north-eastward, has a maximum breadth of 3 furlongs, at its head communicates with small Loch DOINE, is flanked by mountains 2156 to 2467 feet high, and contains salmon, bull-trout, and loch-trout.—*Ord. Sur.*, sh. 46, 1872.

W

WADBISTER, a village in Tingwall parish, Shetland, on Wadbister Voe, 11 miles NNW of Lerwick.

Walkerburn, a modern manufacturing village in Innerleithen parish, Peebleshire, on the right bank of the Tweed, $\frac{1}{2}$ mile NNW of Walkerburn station (across the river) on the North British railway, this being $1\frac{1}{2}$ mile E by N of Innerleithen station and $10\frac{1}{2}$ miles W of Galashiels. The first of its two large woollen factories was founded in 1855; and there are a post office, with money order, savings bank, and telegraph departments, a public school, a public hall capable of accommodating 800 persons, an Established church, and a Congregational church. The Established church, a plain Early English structure built in 1876 at a cost of £1500, in 1883 was raised to *quoad sacra* parochial status. It was enlarged in 1892, and contains now 738 sittings. The water supply is brought from the neighbouring hills. Pop. of village (1861) 316, (1871) 802, (1881) 1026, (1891) 1288; of *q. s.* parish (1891) 1441.—*Ord. Sur.*, sh. 24, 1864.

Wallace Hall. See CLOSEBURN.

Wallace Monument. See ABBEY CRAIG.

Wallacestone and Standrig, a conjoint village in Polmont and Muiravonside parishes, Stirlingshire, $1\frac{1}{2}$ mile SW of Polmont Junction. It has a Wesleyan chapel. Pop. (1871) 492, (1881) 334, (1891) 520.

Wallacetown. See AYR and ST QUIVON.

Wallhouse (originally *Well-house*), a modern castellated mansion, with wings and a lofty square tower, in Torphichen parish, Linlithgowshire, 3 miles NNW of Bathgate. Its owner is Henry Gillon, Esq. (b. 1854;

suc. 1888).—*Ord. Sur.*, sh. 31, 1867. See Jn. Small's *Castles and Mansions of the Lothians* (Edinb. 1833).

Walls, a parish in the W of the Mainland of Shetland, whose church stands at the head of Vaila Sound, 24 miles WNW of Lerwick, under which there is a post office, with money order, savings bank, and telegraph departments. The parish, containing also the post office of Sandness, 31 miles WNW of Lerwick, comprehends the ancient parishes of Walls, Sandness, Papa-Stour, and Foula; comprises the mainland districts of Walls and Sandness, and the inhabited islands of Papa-Stour, Vaila, Linga, and Foula; and is bounded on the E by Sandsting, and on all other sides by the sea. Its utmost mainland length, from N to S, is $6\frac{1}{2}$ miles; its utmost mainland breadth is 5 miles; and its total land area is $38\frac{1}{2}$ square miles or 24,498 acres. The islands are separately noticed. The mainland district extends southward from St Magnus Bay to the S end of Vaila Sound; includes the most westerly ground on the mainland; is indented, but not to any considerable length, by several creeks and bays; and has mostly a rocky coast, often rising to a height of over 100 feet. The interior is hilly, attaining 817 feet at Sandness Hill, 536 at Dale Hill, and 549 at Stoubrough Hill; to the E are more than thirty small fresh-water lochs. The rocks are gneiss, quartzite, granitic porphyry, and Old Red Sandstone. The soil is mostly moorish or mossy, but forms some good arable tracts. Upwards of 1000 acres are in tillage; a great extent is meadow or pasture; and abundance of peat is on the hills. R. T. C. Scott, Esq. of Melby, is chief proprietor. Walls is in the presbytery of Olafthir and the synod of Shetland; the

living is worth £170. The parish church was built in 1743, and contains 500 sittings. The sub-parochial churches of Sandness and Papa-Stour were built in 1749 and 1806, and contain 278 and 190 sittings; there is also one in Foulca. There are likewise Free, Congregational, and Wesleyan churches; and six schools, with total accommodation for 296 children, had (1893) an average attendance of 205, and grants amounting to £253, 6s. 6d. Valuation (1884) £2187, 7s., (1893) £1674, 9s. 5d. Pop. (1801) 1817, (1831) 2143, (1861) 2570, (1871) 2579, (1881) 2262, (1891) 2057.

Walls and Flotta. See HOY and FLOTTA.

Wallyford, a collier village in Inveresk parish, Edinburghshire, $\frac{1}{2}$ mile E by S of Musselburgh. Pop. (1881) 280, (1891) 341.

Walston, a parish in the Upper Ward, E Lanarkshire, whose church stands towards the centre, $2\frac{1}{2}$ miles SSW of Dunsyre station, and $5\frac{1}{2}$ NNE of the post-town, Biggar. Containing also the village of ELSECKLE, it is bounded E by Dolphinton, SE by Biggar, W by Libberton, and NW by Carnwath and Dunsyre; and at its SE corner it just touches the Peeblesshire parishes of Kirkurd and Skirling. Its utmost length, from ENE to WSW, is $3\frac{1}{2}$ miles; its utmost width is 3 miles; and its area is 4366 $\frac{1}{2}$ acres, of which nearly 5 are water. The ditch-like South MEDWIN creeps $3\frac{1}{2}$ miles south-westward along all the Dunsyre and Carnwath boundary, and the Mid Ditch or BIGGAR Burn $2\frac{1}{2}$ miles west-south-westward along most of the south-eastern border, so that the drainage goes partly to the Clyde and partly to the Tweed. Along the South Medwin the surface declines to 660, along Biggar Burn to 820, feet above sea-level; and thence it rises to 1010 feet near Hyndshillend, 1124 near Kingsknowes, 1272 near Borland, and 1689 at BLACK MOUNT on the Dolphinton border. The predominant rocks are eruptive, chiefly felspathic porphyry, clinkstone, and greenstone; but sandstone and limestone also occur. The soil in the valleys is partly sandy, partly a brownish earthy loam; whilst that of the hill-slopes is more adhesive in character, and partly extremely fertile. Nearly 63 acres are under wood; 2806 are arable; and the rest is either rough pasture or moorland. Celts, stone coffins, and a bronze tripod have been discovered in the parish; and on the high ground of Cocklaw farm are vestiges of an ancient circular camp. The parish of Walston anciently belonged to the lordship of Bothwell, and followed for three centuries the fortunes of that lordship; and it constituted a barony, consisting of the two lands or designations of Walston and Elgirk or Elsrickle. The name Walston is supposed to have been derived either from Waldef, a brother of the first Earl of Dunbar, or from one or more of some copious wells in the neighbourhood, one of which bears the designation of Siller Well, while another was anciently in some repute for its medicinal properties. The property is mostly divided between the Lockharts of Lee and Mr Woddrop of Garvald House. Walston is in the presbytery of Biggar and the synod of Lothian and Tweeddale; the living is worth £166. The parish church, built in 1789 and renovated in 1881, contains 145 sittings. There is a Free church at Elsrickle; and Walston public and Elsrickle Hill schools, with respective accommodation for 60 and 64 children, had (1893) an average attendance of 35 and 24, and grants of £36, 2s. 6d. and £23, 9s. 6d. There are a parish library and a curling club. Valuation (1885) £3363, 3s., (1893) £2342, 13s. Pop. (1801) 383, (1841) 493, (1861) 480, (1871) 425, (1881) 340, (1891) 301.—*Ord. Sur.*, ss. 24, 1864.

Wampherflat, a small estate, with a mansion, in the parish and near the town of Lanark.

Wamphray (Gael. *Uam-hfiri*, 'the den in the forest'), a parish of Upper Annandale, Dumfriesshire, containing Wamphray station on the main line of the Caledonian railway, $8\frac{1}{2}$ miles N by W of Lockerbie, $5\frac{1}{2}$ SSE of Beattock, and $6\frac{1}{2}$ S by E of Moffat, under which there is a post office of Wamphray. It is bounded N by Moffat, E by Hutton, S by Applegarth, and W by Johnstone and Kirkpatrick-Juxta. Its utmost length,

from N by E to S by W, is $8\frac{1}{2}$ miles; its utmost width is $3\frac{1}{2}$ miles; and its area is 20 $\frac{1}{2}$ square miles or 13,189 $\frac{1}{2}$ acres, of which 56 are water. The river ANNAN flows $5\frac{1}{2}$ miles south-by-eastward along or close to all the western boundary; and Wamphray Water, rising in the northern extremity of the parish at an altitude of 1480 feet, runs $8\frac{1}{2}$ miles south-south-westward through the interior till, after a total descent of 1210 feet, it falls near Wamphray station into the Annan, after tearing its way noisily through a most romantic and picturesque glen. Dalmakeddar Burn, another of the Annan's affluents, rising at 630 feet, runs 4 miles south-by-westward and westward, for the last $1\frac{1}{2}$ mile along the southern boundary. On Bellcraiglinn Burn, which runs to the Annan along the Moffat boundary, the linn, whence it takes its name, has much mimic sublimity and some fine accompaniments of landscape, and draws numerous visitors from among the 'wellers' at Moffat; while three cascades upon Wamphray Water, not far distant from one another, and bearing the names of the Pot, the Washing Pan, and Dubb's Caldron, are justly admired for their mingled picturesqueness and grandeur. In the south-western corner of the parish, at the influx of Dalmakeddar Burn to the Annan, the surface declines to 228 feet above sea-level, and thence it rises to 846 feet at Blaze Hill, 1272 at Fingland Fell, 975 at Dundoran, 1587 at Laverhay Height, 1561 at Craig Fell, and 2256 at LOCH FELL, which culminates on the meeting-point of Wamphray, Moffat, Eskdalemuir, and Hutton parishes. All the eastern border is the watershed of a mountain range, whose summits possess elevations of from upwards of 2200 to about 800 feet above sea-level, and almost regularly diminish in altitude as the ridge recedes from the N. Another ridge, not very much inferior in mean height, and very similar in progressive diminution, runs parallel to the former along the centre of the parish; but, a little S of the middle, is cloven quite through by the vale of Wamphray Water, debouching to the W. The low grounds are principally a considerable band along the Annan, and some small belts along the minor streams; and over most of their breadth they rise at different gradients to the skirts of the hills, so as to form hanging plains. The heights are variously conical, elongated, and tabular; those in the N are partly green and partly heathy; and those in the S either are in tillage, or produce rich and plentiful pasturage. The valleys have a pleasant appearance, and are in some places picturesque. The predominant rocks are greywacke and Old Red Sandstone. The soil along the Annan is a deep alluvium, and that in other districts is for the most part either a light-coloured clay or a light loam of different shades. About one-fourth of the entire area is in tillage; 270 acres are under wood; and the rest is chiefly hill-pasture, but partly heath and moss. Near Poldean (once a famous hostelry) a large grey monolith marks the spot where Charles II. halted with his army on the march to Worcester (1651); and the highway here follows the line of a Roman road. Not far from the parish church some fine Scotch firs adorn the site of the strong old tower of Wamphray, which in the latter half of the 16th century was held by William Johnstone, the 'Galliard.' His horse-stealing raid and his death, with Willie o' the Kirkhill's revenge for the same, form the theme of a well-known ballad, *The Lads of Wamphray*. Other antiquities are the site of a stone circle and traces of Roman and Caledonian camps. Sir Robert Jardine, Bart., whose seat, Castlemilk, is in St Mungo parish, is the chief proprietor. Wamphray is in the presbytery of Lochmaben and the synod of Dumfries; the living is worth £280. The parish church, $1\frac{1}{2}$ mile NE of Wamphray station, is prettily situated on the left bank of Wamphray Water, but itself is a plain structure of 1834, containing 248 sittings. Over the W door is a curious sculptured stone from the pre-Reformation chapel of Barnygill, 3 miles higher up the glen. Near the station is Wamphray U.P. church; and Johnstone and Wamphray Free church stands just across the Annan in Johnstone parish. Wamphray public school, with accommodation for 138 children, had

(1893) an average attendance of 65, and a grant of £64, 14s. 6d. Pop. (1801) 423, (1831) 580, (1861) 559, (1871) 505, (1881) 455, (1891) 458.—*Ord. Sur.*, shs. 10, 16, 1864.

Wandell. See LAMINGTON.

Wanlockhead, a mining village in the NE corner of Sanquhar parish, NW Dumfriesshire, $1\frac{1}{2}$ mile SSW of Leadhills, $6\frac{1}{2}$ miles WSW of Elvanfoot station, $8\frac{1}{2}$ SSW of Abington, and $8\frac{1}{2}$ ENE of the town of Sanquhar. It lies, 1350 feet above sea-level, at the head of the lonely glen of Wanlock Water, in one of the bleakest scenes of the Southern Highlands, the chief of the big, smooth hills that rise around it being Wanlock Dod (1808 feet), Green Lowther (2403), Lowther Hill (2377), and Stood Hill (1925). The mines, which alone could people so cheerless and elevated a region, are continuous with those of LEADHILLS on the Lanarkshire side of the frontier; and jointly with them they extend to a circumference fully 4 miles in diameter. The Wanlockhead mines were worked as early as 1512. Gold was the primary object of search, and has not yet ceased to be found. Sir James Stampfield opened the lead mines about the year 1680, and worked them on a small scale till the Revolution. Matthew Wilson obtained in 1691 a 19 years' lease, and successfully worked the vein called Margaret's; whilst a mining company, having procured in 1710 a 31 years' lease, commenced to smelt the ore with pit-coal, and partially worked the three veins of Old Glencrieff, Belton, and New Glencrieff, the last of which only proved compensating. The new and large Friendly Mining Society formed in 1721 a copartnership with the smelting company, and got 15 years added to the 20 which had yet to run of the lease. The two companies jointly worked all the then known four veins for 6 years, when they separated and pursued their object in different localities. But in 1734 both companies resigned their lease; and Alexander Telfer became lessee for the next 21 years. He worked the mines vigorously, and made a richly compensating discovery of a large knot of lead. In 1755, a new company, with Mr Ronald Crawford at its head, became lessees of the whole mines. Their first lease was only for 19 years; but they afterwards obtained an act of parliament extending it to 1812, and, previous to that year, they were granted a new lease to expire in 1842. The new company were enterprising and eminently successful; they discovered new and rich ramifications of the veins, and when workable ore could no longer be found they erected a series of steam engines, some on the surface, and some under ground, to carry off water from their borings beneath level. So successful were the operations that during 50 years 47,420 tons of lead were raised. From 1842 the Duke of Buccleuch retained the mines under his own management; and they are now worked by means of powerful hydraulic and steam engines. All the most recent mining improvements have been introduced; and the process of refining the bars for separating the silver from the lead is carried on simultaneously with the smelting. The present yearly average of the output is 1500 tons of lead and 11,000 ounces of silver. Along with the lead ore or lead glance are small quantities of manganese, ochre, blende, brown hematite, copper pyrites, green lead ore, white lead ore, and lead vitriol. A chapel, built in 1755 by the mining company at a cost of not more than £70 or £80, in 1848 was superseded by a new church with 325 sittings, built and endowed by the Duke of Buccleuch, and raised to *quoad sacra* parochial status in 1861. It was long ere a site could be got for a Free church, and meanwhile Drs Chalmers, Guthrie, Candlish, etc., preached on the hill-side; but at length a church, with 400 sittings, was opened in 1859. Wanlockhead has also a post office, with money order, savings bank, and telegraph departments, a library and reading-room, a school, etc. Pop. of village (1831) 675, (1861) 743, (1871) 772, (1881) 788, (1891) 745; of *g.s.* parish (1881) 854, (1891) 745.—*Ord. Sur.*, sh. 15, 1864. See the Rev. J. Moir Porteous, D.D., *God's Treasure-House in Scotland* (Lond. 1876).

Wanlock Water, a stream of Sanquhar parish, Dum-

frieshire, running $5\frac{1}{2}$ miles north-westward till, after a descent of 820 feet, it unites with Spango Water to form CRAWICK Water, which falls into the Nith near Sanquhar.

Wardhouse. See KENNETHMONT.

Wardlaw. See KIRKSHILL.

Ward Law. See ETTRICK.

Ward-of-Cruden. See PORT ERROL.

Warmbie. See ANNAN.

Warthill, a modern Elizabethan mansion in RAYNE parish, Aberdeenshire, $1\frac{1}{2}$ mile NNW of Warthill station on the Turriff and Macduff branch of the Great North of Scotland railway, this station being $3\frac{1}{2}$ miles NNW of Inveramsay Junction and $2\frac{1}{2}$ NW of Aberdeen. Its present owner is George Arbuthnot Leslie, Esq. (b. 1852; suc. 1880), son-in-law of the late owner, William Leslie, Esq.—*Ord. Sur.*, sh. 86, 1876.

Warwickhill House, a mansion in Dregghorn parish, Ayrshire, 4 miles E by N of Irvine.

Washington, a village at the mutual boundary of Coupar Angus parish, Perthshire, and Kettins parish, Forfarshire, $3\frac{1}{2}$ miles NE of Coupar Angus town.

Waterbeck. See MIDDLEBIE.

Waterloo, a village, with a public school, in Cambusnethan parish, Lanarkshire, $1\frac{1}{2}$ mile SE of Wishaw. Pop. (1871) 633, (1881) 855, (1891) 967.

Waterloo. See AUCHTERGAVERN.

Watersay. See VATERSAY.

Waterside, a village in Dalmellington parish, Ayrshire, on the right bank of the Doon, $3\frac{1}{2}$ miles NW of Dalmellington town. It has a railway station, a chapel of ease, a Roman Catholic chapel, a public school, and ironworks (1847). Pop. (1871) 1681, (1881) 1473, (1891) 1222.—*Ord. Sur.*, sh. 14, 1863.

Waterside, a hamlet in Fenwick parish, Ayrshire, 6 miles NE of Kilmarnock, under which it has a post office.

Waterside, a village in Kirkintilloch parish, Dumbartonshire, 2 miles ESE of the town. Pop. (1871) 426, (1881) 420, (1891) 446.

Waterside, a mansion in Keir parish, Dumfriesshire, near the influx of Scar Water to the Nith, $2\frac{1}{2}$ miles SSE of Penpont.

Watling Street, a Roman road from Yorkshire in England to the E end of Antoninus' Wall in Scotland. After crossing the walls of Hadrian and Severus, and passing the stations of Risingham and Rochester, it arrives through a rugged country, by way of the Golden Pots on Thirlmoor, at Chewgreen, the Roman post nearest the Border. Approaching Scotland in a north-north-westerly direction, it first touches it at Brownham Law, near the sources of Coquet Water; and, after having divided the kingdoms for $1\frac{1}{2}$ mile, enters Scotland at Blackhall Hill, on the boundary between Oxnam and Hounam in Roxburghshire. From this point it runs 12 miles north-westward to the Teviot, near the mouth of the Jed; forming for a long way the boundary between Oxnam and Hounam; traversing small wings of Oxnam, Jedburgh, and Crailing—passing some vestiges of a station, just before reaching the Teviot—and crossing the Kail at Towford, the Oxnam a little below Capehope, and the Jed a little below Bonjedward. Near the points respectively of its passage beyond the Oxnam and beyond the Teviot, it seems to have sent off one branch northward into Roxburgh, and another deviatingly round the N side of Penielheugh. The main line, however, leads through the enclosures of Mount Teviot; passes along the S side of Penielheugh; forms for $3\frac{1}{2}$ miles the NE boundary of Ancrum; passes over St Boswell's Green, and crosses Bowden Burn above Newton, where its remains are very distinct; and thence moves forward to the eastern base of the Eildon Hills, and to the Tweed above Melrose and near Gattonside, amidst an unusually large number of Roman and British camps and fortifications. After passing the Tweed, the road bends from its hitherto north-westerly to a northerly direction; proceeds up Melrose parish on a line nearly parallel with the Leader, but inward from its vale; passes Roman stations at Chesterlee above Clackmae, and at Walls near New Blainslee; becomes very distinct through-

out $\frac{1}{2}$ mile; and then, about $\frac{1}{2}$ mile ENE of Chieldhelles chapel, enters Lauderdale. The road appears to have passed on the W side of Lauder town and E of Old Lauder, where there are remains of a military station; and about $\frac{1}{2}$ mile onward it again becomes visible, takes for a brief way the name of the Ox-road, and leads up to a strong station, called Black Chester. From this post it passes on by the W of Oxtou, crosses the western head-stream of the Leader, and leads on in a distinctly marked line to the Roman station at Channelkirk; thence it proceeds forward to far-seeing Soutra Hill, in the small projecting district of Haddingtonshire; and descending thence it turns to the left, pursues a north-westerly direction, and traverses the parishes of Midlothian onward to Currie, which stands in a bend of the Water of Leith, 6 miles SW of Edinburgh. Between Soutra Hill and Currie, it crossed the South Esk near Dalhousie Castle, and the North Esk near Mavisbank, where many Roman antiquities have been found; and thence it pursued its course by Loanhead and Straiton, which probably owe their names to its neighbourhood, to Bow Bridge, at the E end of the Pentland Hills. Beyond Currie it proceeded to the naval station on the Forth at Cramond; and thence it crossed the Almond into Linlithgowshire, and passing Barnbogle Hill, went along Eeklin Moor to Carriden.

The great western Roman road, or that which came up Annandale, crossed into Crawford, and went down the valley of the Clyde, is also in some localities called Watling Street.

Watten, a parish, containing a hamlet of the same name, near the centre of the eastern portion of Caithness. It is bounded N by the parishes of Bower and Wick, E by the parishes of Wick and Latheron, S by the parishes of Latheron and Halkirk, and W by the parish of Halkirk. The shape is an irregular oblong, measuring about 7 by $6\frac{1}{2}$ miles, with a projection about 3 miles long and $1\frac{1}{2}$ mile wide passing S from the S side, and another small foot-shaped projection standing out for $1\frac{1}{2}$ mile at the SW corner. The boundary line on the N is artificial, but elsewhere it is largely natural, following from Wick Water northward the high ground between the Achairn and Strath Burns—two tributaries of the Wick—to the Moss of Leanas, where it cuts across the Camster Burn, curves round the high ground at Hill of Bigcus (628) and Stemster Hill (815)—this portion forming the southern projection—and thence N by W to Spital Hill (577) between Spital Quarries and Banniskirk Quarries, and thereafter irregularly north-eastward back to the northern boundary W of Loch Watten. The extreme length of the parish, from North Watten Moss on the N, 2 miles N of Loch Watten, southward to Hill of Bigcus, is $11\frac{1}{2}$ miles; the average breadth of the greater part of it is 6 miles; and the total area is 31,751·549 acres, of which 1172·134 are water. The height of Loch Watten is 55 feet above sea-level, and from this the surface undulates upward in all directions except due E, reaching a height of 300 feet or over along the greater part of the western, south-eastern, and eastern borders, and of from 70 to 200 feet on the NE. One-fourth part of the parish to the N is mostly under cultivation, but the rest is moor and rough grazing land. There are, what is rare in Caithness, a few acres of woodland. The soil varies from stiff friable clay and loam to moorish earth, the latter being most abundant. The underlying rock is Old Red Sandstone, but in the form of flagstone, which is worked on the NW at Spital Quarries. Near the N end of the parish is the large Loch Watten ($2\frac{3}{4}$ miles $\times$ $\frac{1}{2}$ mile; 55 feet); near the centre of the W side, $2\frac{3}{4}$ miles SW of Loch Watten, is Loch of Toftingale ($\frac{3}{4}$ $\times$ $\frac{3}{4}$ mile; 235 feet); and in the SW and S are the small lochans called the Dubh Lochs of Shielton and the Dubh Lochs of Munsary. The drainage of the northern part of the parish is carried off by the streams flowing to Loch Watten and the upper $\frac{1}{2}$ mile of Wick Water, which issues from the E end of the loch; in the SW the drainage is carried off by the streams flowing to Loch of Toftingale, by the Burn of Acharole issuing from it

and smaller streams flowing to the latter; and in the S and E by the Strath Burn and the smaller streams flowing to it. The Strath and Acharole Burns unite $\frac{1}{2}$ mile S of the hamlet of Watten, and the joint stream enter. Wick Water immediately after it has left Loch Watten. There is good fishing both in Loch Watten and in Loch of Toftingale, the trout in the former being from $\frac{1}{2}$ lb. to 3 lbs., and in the latter about $\frac{1}{2}$ lb. Loch Watten is preserved, but the other is open to the public. There are traces of stone circles at Halsary and Moss of Wester Watten, and of Picts' houses or weems; and NW of the church at Stonehousie is a standing-stone, said to mark the burial-place of Skuli, Jarl of ORKNEY, who, according to Torfaeus, was buried at Hofn, though Hofn is more probably rather to be identified with Huna. Backlass, 2 miles W by S of the village, was in the end of the 18th century the dwelling-place of a noted robber, David Marshall, who seems to have been a northern Rob Roy. To the N of Loch Watten the parish is traversed for $4\frac{1}{2}$ miles by the Georgemas and Wick portion of the Highland Railway, with a station at the E end of the loch, $153\frac{1}{2}$ miles NE of Inverness, and $7\frac{1}{2}$ WNW of Wick. Bower station also is close to the NW border of the parish. To the S of the loch is one of the main lines of road from Wick to Thurso, which passes through the parish for $5\frac{1}{2}$ miles; and the road from Thurso to Latheron runs for 1 mile across the SW corner. There are also in the N a number of good district roads. The hamlet, the old name of which was Achingale, is near the E end of the loch, and has a post and money order office. There are fairs at the church on the first Tuesday of November, and at Stonehousie on the fourth Tuesday of December. Watten is in the presbytery of Caithness and synod of Sutherland and Caithness, and the living is worth £211 a year. The parish church, a very old building with 750 sittings, is near the station, a short distance NE of the loch; and there is a Free church at the village. Under the School Board Gersa, Lanergill, and West Watten schools, with accommodation for 70, 110, and 133 pupils respectively, had in 1893 attendances of 40, 71, and 68, and grants of £44, 7s. 6d., £66, 5s. 6d., and £74, 14s. The chief proprietors are Sir Ralph Anstruther of Balcaskie, Bart., Thomas Adam, Esq. of Lynegarr, and the Duke of Portland. Pop. (1801) 1246, (1831) 1234, (1861) 1491, (1871) 1453, (1881) 1406, (1891) 1390.—*Ord. Sur.*, sh. 116, 1878.

Wattston, a village in New Monkland parish, Lanarkshire, $3\frac{1}{2}$ miles N by E of Airdrie. Pop. (1881) 324, (1891) 354.

Wauchope. See LANGHOLM.

Wauchope, a mansion in Hobkirk parish, Roxburghshire, 10 miles SE of Hawick. Its owner is Walter MacMillan Scott, Esq. (b. 1848; suc. 1862).—*Ord. Sur.*, sh. 17, 1864.

Waulkmills, a village in St Vigean's parish, Forfarshire, 2 miles N by W of Arbroath.

Wedale. See SROW.

Wedderburn Castle, a Grecian mansion in Duns parish, Berwickshire, 2 miles ESE of the town.

Weem (Gael. *uaimh*, 'a cave'), a village and a parish of Perthshire. The village, on the N side of the Tay, 1 mile NW of Aberfeldy, has a good hotel and a public school.

The parish prior to its reconstruction by the Boundary Commissioners in 1891 lay dispersed in separate and far-distant portions, over well-nigh a fourth of Perthshire, from near the head of Glenlochy on the W, to the vicinity of Loch Freuchie on the E, and from 3 miles S of Loch Tummel on the N, to within $3\frac{1}{2}$ miles of Loch Earn on the S. It claimed, at 22 miles distance from its parish church, the very nearest farm to the church of Killin; and had other farms at a still greater distance, some of them upwards of 30 miles, both in Glenlochy and Glenlyon. Its detached districts were eleven in number, all intermixed with wings and detachments of other parishes. In the reconstruction of the parish five of these detached districts were transferred to Dull parish, two to Killin, one between Killin,

and Fortingall, and another between Fortingall and Kenmore, while one each was given to Kenmore and Logierait. The main portion of the old parish, which consisted of the Menzies estate so far as within the parish, formed the nucleus of the new parish. To this was added the part of Dull lying on the left bank of the Tay and east of the main portion of Weem, and which comprised the lands of Glassie, Cluny, and Derculich. To it were also added the detached parts of Logierait parish situated to the north of Loch Glassie, at Edradynate, and at Killechassie. For further particulars regarding these changes see the parishes and places mentioned. Weem parish, as now constituted, is bounded NE, E, and SE by the parish of Logierait, and S, W, and N by the parish of Dull. Its principal features are noticed in our articles on CASTLE-MENZIES, GLASSIE, etc. The principal landowners are Sir Robert Menzies, Bart., and the Earl of Breadalbane. Giving off portions to Innerwick *quoad sacra* parish, Weem is the seat of a presbytery in the synod of Perth and Stirling. The living is worth £148. The parish church was built in 1835, and contains 561 sittings. In the E end of the old church, which is still standing, is a curiously sculptured monument, with a Latin inscription, to Sir Alexander Menzies, who died in 1624. The private Episcopal chapel of St David was consecrated in 1878. The public school, with accommodation for 64 children, had (1898) an average attendance of 45, and a grant of £47, 11s. Valuation (1892) £5025, 16s. 11d. Pop. (1891) 437, of whom 351 were in the ecclesiastical parish.—*Ord. Surv.*, shs. 55, 47, 46, 1869-72.

Weir or Viera, a triangular island of Rousay parish, Orkney, separated from the SE side of Rousay island by Weir Sound, which is $\frac{4}{5}$ furlongs to 1 mile broad, and approaching at its western apex to within $\frac{1}{4}$ mile of Pomona. Its length, from ENE to WSW, is $2\frac{1}{2}$ miles; its utmost breadth is $7\frac{1}{2}$ furlongs; and its surface is low, its soil very fertile. There are on it the ruins of a church and vestiges of a fortification. Pop. (1831) 93, (1851) 62, (1871) 78, (1881) 80, (1891) 67.

Weir, Bridge of, a village in Kilbarchan and Houston parishes, Renfrewshire, on the river Gryfe, $\frac{3}{4}$ miles NW of Johnstone, 7 W by N of Paisley, and 14 W from Glasgow, on the Glasgow and South-Western railway. Owing its existence to the establishment of two large cotton mills in its vicinity in 1792 and 1793, it is rapidly growing in favour as a country residence for the merchants of the west, a large number of villas having been erected. It has a post office with money order, savings bank, and telegraph departments, a railway station, a branch of the Clydesdale Bank, several hotels, a water supply of 1881, a gaswork, a bowling-green, a golf club, a public school, a thread mill, a calico printing work, a saw mill, an Established church, a Free church, (1826, formerly Original Burgher), and a U.P. church. The Established church, erected in 1879 as a chapel of ease, was raised to *quoad sacra* status in 1887. Ranfurly Castle is a picturesque ruin about half a mile from the village, and gives the title of Earl to the Knox family; while near it stands Castle Hill, an artificial mound said to have been a Roman military work. Situated about a mile and a half from the village are the Orphan Homes of Scotland, inaugurated by Mr William Quarrier in a back street in Glasgow in 1871, and then accommodating 30 children, but removed hither in 1876. From this time home after home has been added, until now there is accommodation for some 1100 boys and girls, with church, school, workshops, laundry, storerooms, and gardens. There is also a training ship for such lads as avow a desire to follow the life of a sailor—the chief object being to equip them for taking positions as missionary seamen in the mercantile navy, and also for becoming teachers of navigation. The length of the ship is 120 feet by 23, and the depth between decks 9 feet. The vessel is firmly fixed on solid land. The ground on which the homes are built—formerly the farm of Nittingshill, and bought by Mr Quarrier for £3560—extends to about 40 acres, and belongs in perpetuity to the homes, in connection with which there is neither

directorate nor committee, all the property being vested in trustees. Donors of money are asked to state how they wish their gift to be applied—whether to maintenance, the emigration scheme, or the building fund. The homes have been built and are supported by voluntary contributions. Only £12 is required for the maintenance, schooling, etc., of each child annually. Very many children, since the beginning of the work, have been taken to Canada and placed in carefully selected situations. Mr Quarrier's latest undertaking is the erection of an hospital for the treatment of cases of consumption. In all his schemes he is generously supported by the public. Pop. (1861) 1443, (1871) 1815, (1881) 1267, (1891) 1646, of whom 1089 were in Kilbarchan.—*Ord. Surv.*, sh. 30, 1866.

Weisdale. See TINGWALL.

Wellbank, a post office under Dundee, in Monifieth parish, Forfarshire, 6 miles N of Broughty Ferry.

Wellfield, a mansion on the northern outskirts of Duns, Berwickshire.

Wellfield, a mansion in Strathmiglo parish, Fife, $\frac{1}{2}$ mile W by S of the town.

Wellhall, a mansion in Hamilton parish, Lanarkshire, $\frac{1}{4}$ mile W of the town.

Wells House, a mansion in the N of Hobkirk parish, Roxburghshire, near the left bank of Rule Water, 3 miles ESE of Denholm. See STROBS CASTLE.

Wellwood, an estate of 17,566 acres in Muirkirk parish, Ayrshire, on the river Ayr, $2\frac{1}{2}$ miles WSW of Muirkirk town. It was purchased in 1863 for £135,000 by James Baird, Esq. of Knydart and Cambusdoon (1803-76); and his nephew and successor, John G. A. Baird, Esq. (b. 1854), has built on it a good mansion.—*Ord. Surv.*, sh. 15, 1864. See A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1885).

Wemyss, a parish on the S coast of Fife, is bounded NW by Markinch, N by Markinch and Soconie, E and SE by the Firth of Forth, and SW by Dysart. Its greatest length, from NE to SW, is $6\frac{1}{2}$ miles; its greatest breadth is $2\frac{1}{2}$ miles; and its total area is 5004 $\frac{1}{2}$ acres, of which 154 $\frac{1}{2}$ are foreshore, and 4 $\frac{1}{2}$ water. Of this area 118 acres belonged to the Innerleven detached part of the parish of Markinch, but was transferred by the Boundary Commissioners in 1891 to Wemyss. The coast-line of about 6 miles is bold and very rocky, though not bounded by any very lofty cliffs. On the coast, between the villages of West Wemyss and Buckhaven, there are eight or ten rock caves, some of them of large extent, and all above high-water mark. One of the largest, the Kelp or Glass Cave, was used as one of the earliest glass-works in this country, while the Court Cave, to the E of East Wemyss, derives its name from an encounter said to have occurred in it between James V. and some Gipsies. In several of the caves there are a number of curious inscriptions, which are fully described in a pamphlet by the late Sir James Y. Simpson. The name of the parish is derived from the Gaelic *uaimh*, 'a cave.' Between the villages of East and West Wemyss, close to the shore, there is a narrow stretch of links, which is used as a golfing ground.

The surface of the parish in some places immediately above the shore is considerably elevated, and rises in a general slope towards the N and W, attaining 215 feet at Bowhouse, 260 at Earl's Seat, 147 at Perceval, and 121 at Muiredge. The river Leven runs along its N boundary for $\frac{1}{2}$ mile. The rocks belong chiefly to the Carboniferous formation; those in the NE and centre are mainly dark red sandstone. The beach between East and West Wemyss is covered with blue whinstone ice-borne boulders; in the SW and E a large quantity of coal and some sandstone are found. There are about a dozen coal mines. The soil is in some places sandy and shallow, but in others of a strong, dark-coloured, clayey character, and of great depth. Fishing is an important industry along the coast, especially at Buckhaven; and the linen manufacture employs a good number of hands, chiefly at EAST WEMYSS, where there is a factory. The coal and mineral trade formerly centred in WEST WEMYSS; but a wet dock with a draught of 32

feet at low water, constructed at Methil by Mr R. G. Erskine Wemyss in 1875 at an estimated cost of over £100,000, and since sold to the North British Railway Company, and the formation by the same company in 1894-95 of a new dock with an area of 6½ acres at an estimated cost of £200,000, will attract much of the shipping, especially since most of the coal is now raised in pits in the E of the parish. The chief landowner in the parish is Mr R. G. Erskine Wemyss of Wemyss and Torrie, who is superior of all lands in the parish.

The parish contains the towns of Buckhaven (4006) and West Wemyss (1800), the villages of East Wemyss (1010), Coaltown of Wemyss (381), Methil (1662), Kirkland of Methil (441), and Methilhill (503). The principal mansion is Wemyss Castle, the seat of R. G. Erskine Wemyss, Esq., situated on a cliff about 35 feet above the level of the sea, a little to the E of the village of West Wemyss. It is a large and weather-beaten building—part of it of considerable antiquity—and forms a fine feature in the landscape as seen from the sea. Mary Queen of Scots met Darnley for the first time within its walls in 1565. Charles II. spent a day in it in July 1650, and slept a night there in July 1657. There is preserved in it a large silver basin, which was given in 1290 by the King of Norway to Sir Michael Wemyss of Wemyss, on occasion of that knight and Sir Michael Scott of Balwearie appearing at the Norwegian court as ambassadors from Scotland to bring home the Princess Margaret. More accounts than one are given of the origin of the family of Wemyss; but all agree as to their being derived from the family of Macduff, Mormaer of Fife in the reign of Malcolm Ceanmor. The family of Wemyss, therefore, is one of the very few Lowland families which, through the male line, can claim kindred with Celtic blood. The lands now forming the parish of Wemyss are said to have been part of the estate of Macduff, Shakespeare's well-known thane of Fife, during the reign of Malcolm Ceanmor; and a little to the E of East Wemyss, immediately above the Well Cave, there is an extensive ruin, of red sandstone, known as Macduff's Castle, which, according to tradition, was a stronghold of the great thane. The present proprietor of the Wemyss estate, Randolph Gordon Erskine Wemyss, Esq. (b. 1858; suc. 1864), is said to be the 27th in direct descent from Hugo, the second son of Gillimichael, who was third in descent from Macduff. Wemyss gives the title of Earl of Wemyss to a scion of the noble family of Douglas. (See GOSFORD.)

The Rev. George Gillespie, who figured in the ecclesiastical affairs of the 17th century, was minister of Wemyss for about 4 years. Besides Macduff's Castle the antiquities in the parish include the ruins of an ancient chapel within the grounds known as Chapel Garden, ½ mile W of West Wemyss.

A branch railway from Thornton Junction of the North British railway traverses the parish to Methil, with intermediate stations called West Wemyss, Wemyss Castle, and Buckhaven. A short reach of the North British railway (about 6 furlongs), between Dysart and Thornton, also falls within the boundaries of the parish in the extreme W.

Wemyss parish is in the presbytery of Kirkcaldy and synod of Fife; the living is worth £340. The parish church is at East Wemyss; and there are *quoad sacra* churches at Methil and West Wemyss. A mission station was opened at Buckhaven in 1894. There are Free churches at East Wemyss, Buckhaven, and Methil, and two U.P. churches at Buckhaven. The accommodation, average attendance, and government grants of the schools in this parish in the year 1898 were as follows: Buckhaven public school, 1104, 724, £768, 13s. 6d.; East, evening public school, —, 50, £27, 10s.; Kirkland Cross Roads public school, 538, 467, £408, 12s. 6d.; East Wemyss public school, 299, 238, £229, 10s. 1d. Coaltown and West Wemyss schools (both the property of Mr Wemyss) together accommodate 474.

A water-supply was introduced all over the parish, under the Public Health Act, about 1877, at a cost of

£25,000; and a gaswork midway between Buckhaven and East Wemyss supplies both places with gas. Valuation (1885) £33,727, 16s. 5d., (1893) £53,736, 13s. 2d. Pop. (1801) 3264, (1831) 5001, (1861) 5970, (1871) 6400, (1881) 7307, (1891) 10,534, of whom 4989 were in Wemyss ecclesiastical parish.—*Ord. Sur.*, sh. 40, 1867.

Wemyss Bay, a small watering-place in Innerkip parish, Renfrewshire, on the Firth of Clyde, immediately N of Skelmorlie in Largs parish, Ayrshire, and at the terminus of the Glasgow and Wemyss Bay railway (1865), 8 miles SW of Upper Greenock and 30½ W of Glasgow. It has a number of handsome villas, a post office, with money order, savings bank, and telegraph departments, a branch of the Clydesdale Bank, a hotel, a steamboat pier, an English Episcopal church (1879)—a pretty Gothic red sandstone edifice, with a fine chime of 8 bells—and a Roman Catholic church, St Joseph and St Patrick (1887; 130 sittings). See SKELMORLIE.—*Ord. Sur.*, sh. 29, 1873.

Wemyss, East, a village in Wemyss parish, in the S of Fife, is situated on the shore, about 1 mile SSW of Buckhaven, and 1½ NE of West Wemyss. It has a station called Wemyss Castle, on the branch railway between Thornton and Methil. Its houses are well-built and comfortable; and its whole appearance is above the average of villages on the E coast. The red-tiled roofs give it an exceedingly picturesque appearance, as seen from a little distance. The pretty cemetery occupies the summit of a well-wooded elevation, a little to the NE. The parish church, an old cruciform building, estimated to hold about 1000 persons, stands near the centre of the village; and the Free church, an unassuming edifice, seated for 380, at the W end. There are two public schools at East Wemyss, already noted under the parish. An ornamental cottage hospital was erected by Mr R. G. Erskine Wemyss in 1883 at a cost of £1200. It contains a surgical and two medical wards, with 24 beds in all, besides accommodation for nurses. There are a reading-room in the village, with a library attached, two curling clubs, a golf club, and a co-operative society. There is a small brewery at East Wemyss, but the chief industry of the place is the manufacture of linen fabrics, carried on in a large and old-established factory. Pop. (1831) 753, (1861) 799, (1871) 777, (1881) 846, (1891) 1010.

Wemyss Hall, a mansion in Cupar parish, Fife, 1½ mile S of the town. Its owner is James Balfour Wemyss, Esq. (b. 1828; suc. 1871).—*Ord. Sur.*, sh. 40, 1867.

Wemyss, West, a small town in Wemyss parish in the S of Fife, is situated on the coast, 2 miles NE of Dysart. The nearest station, though bearing the name of the village, is very inconveniently situated about a mile away, on the branch line referred to under East Wemyss. Consisting mainly of one street, West Wemyss has a less prosperous and comfortable air than East Wemyss, although its population is considerably greater. About the centre of the village is the town-hall, with a curious foreign-looking tower. The only church is the *quoad sacra* parish church. There is a post and telegraph office under Kirkcaldy, a gaswork, and a coastguard station. West Wemyss formerly carried on a brisk manufacture of salt, and so maintained a good harbour. Although the manufacture has now ceased, the harbour is still kept up on account of the considerable coal traffic which passes through it. In 1872-73 a wet dock was constructed at a cost of about £10,000, covering about an acre, with a depth of water of 18½ feet, and a berthage of 450 feet. As a burgh of barony West Wemyss is governed by 2 bailies, a treasurer, and 12 councillors. Pop., which is almost entirely mining, (1831) 858, (1861) 1128, (1871) 1281, (1881) 1206, (1891) 1300.

West Arthurlie. See ARTHURLEE.

Westraigs, a station on the North British railway, 5½ miles W by S of Bathgate.

Westerdale, a place with a post office, Free church, and public school, in Halkirk parish, Caithness, on the right bank of the river Thurso, 13 miles S of Thurso.

Westerhall. See WESTERKIRK.

Westerkirk, a parish of Eskdale, NE Dumfriesshire, whose church, centrally situated, stands on the left bank of the Esk, 6 miles NW of the post-town, Langholm. The parish is bounded NE by Robertson in Roxburghshire, E by Ewes, SE and S by Langholm, SW by Tundergarth and Hutton, and W and NW by Eskdalemuir. Its utmost length, from N to S, is 10½ miles; its utmost breadth, from E to W, is 6½ miles; and its area is 42½ square miles or 27,152 acres, of which 160 are water. The river Esk, formed at the western verge of the parish by the confluence (490 feet above sea-level) of the Black and White Esks, winds 9½ miles east-south-eastward, for the last 9 furlongs along the Langholm boundary. Nearly midway in this course it is joined by **MEGETT WATER**, which, rising at an altitude of 1200 feet in the northern extremity of the parish, runs 7¼ miles south-by-westward, and itself receives **Stennies Water**, rising at 1480 feet, and flowing 5½ miles south-south-westward. Thirteen smaller rills fall into Meggett Water, and twenty into the Esk. In the E, where the Esk leaves the parish, the surface sinks to 395 feet above the sea; and chief elevations to the S of the river are **Bombie Hill** (1336 feet) and **Cauld-kine Rig** (1478); to the N, **Great Hill** (1434), **Westerker Rig** (1102), **Dod Fell** (1519), and **Faw Side** (1722), the last near the meeting point of Westerkirk, Ewes, and Robertson parishes. Thus, though hilly, this parish is nowhere mountainous; and its hills are mostly verdant and finely pastoral. Greywacke and greywacke slate are the predominant rocks; and secondary trap, generally in the form of caps, occurs on the summit of some of the hills. At Jamestown upon Glendinning farm, on the left bank of Meggett Water, an antimony mine was worked from 1793 to 1798, and yielded during that period 100 tons of regulus of antimony, worth £8400. It was worked again, but only again to be stopped, in the beginning of 1892. A mass of iron rudely resembling two 4-inch cubes placed together, was discovered on Hopsrig farm in March 1881, and gave rise to discussion as to whether it was meteoric or an ancient artificial British 'bloom.' The soil on the low grounds along the Esk is a light and fertile loam; on the rising ground is a deep strong loam; and on the tops of many of the hills degenerates into moss. Rather less than one-seventeenth of the entire area is either arable or meadow land, some 200 acres are under wood, and nearly all the rest is hill-pasture. Antiquities are vestiges of hill-top camps, supposed to have been outposts of the Roman station of **Castle-O'er** in Eskdalemuir; traces along the vale of the Esk of a supposed chain of communication between **Castle-O'er** and **Netherbie**; and a triangular and seemingly very ancient fortification on the farm of **Enzieholm**; whilst till lately there existed the remains of a stone circle on the peninsula of the Esk and Meggett Water. The road from Langholm to Ettrick and Yarrow passes up the vale of the Esk. The Duke of Buccleuch, though a large proprietor, has no seat in the parish. **Craigcleuch**, a very handsome mansion 2½ miles NNW of Langholm, was erected by the late Alex. Reid, a wealthy manufacturer of that town. **Burnfoot**, a beautifully situated house, 3½ miles NNW of Langholm, is the seat of William Elphinstone Malcolm, Esq. (b. 1817; suc. 1838). His father, Admiral Sir Pulteney Malcolm (1768-1838), was born at Douglas, and his uncle, Gen. Sir John Malcolm (1769-1833), at Burnfoot. (See **LANGHOLM**.) **Westerhall**, 5 miles W of Langholm, is beautifully situated near the Esk's left bank, backed by steep hills, and embosomed in wood. It suffered great damage by fire in Feb. 1873, but has been restored. Held by his ancestors for 400 years, the estate belongs now to Sir Frederick John William Johnstone, eighth Bart. since 1700 (b. and suc. 1841). Conservative member for Weymouth 1874-85. His great-uncle, Sir William Johnstone, who died in 1805, was a member of seven successive parliaments, and acquired a large property in America, besides the borough of Weymouth. Other illustrious natives were William Pulteney, Earl of Bath (1682-1764), Sir Robert Walpole's opponent; and Thomas Telford (1757-1834),

the celebrated engineer. He was the posthumous son of a shepherd, and was brought up with difficulty by his poor and widowed mother. After receiving an elementary education at the parish school, he was apprenticed at an early age to a builder, and worked for some years as a stonemason. A stone to his father's memory in the churchyard is said to have been chiselled by him. He afterwards rose to great fame as an architect, and amassed an enormous fortune. There is a monument to his memory in Westminster Abbey. He bequeathed a considerable sum of money 'to the minister of Westerkirk in trust for the parish library.' The bequest yields a handsome annual interest for the purchase of books, which now number 6000 volumes. Probably no rural parish in the kingdom can boast of such a collection. In 1860 it was found necessary to provide increased accommodation for the library, and a very neat and commodious building was erected, by public subscription, at Old Bentpath. Westerkirk is in the presbytery of Langholm and the synod of Dumfriesshire; the living is worth £340. The parish church, a handsome Gothic building, with a massive square tower and 350 sittings, was opened in Dec. 1881. The Johnstone family mausoleum, in the churchyard, presents a handsome circular colonnade of fluted Doric pillars surmounted by a beautifully carved frieze and an elegant dome. The ancient church and half of the barony of Westerkirk were given in 1321 by Robert I. to the monks of Melrose, and the church thence till the Reformation was a vicarage. A chapel subordinate to the church, and dedicated to St Martin, stood at Boykin, and was in 1391 endowed with some lands by Adam de Glendonyng or Glendinning of Hawick. Another chapel subordinate to the church stood at Watcarrick, now in Eskdalemuir. In 1703 the upper part of Westerkirk was erected into the separate parish of Eskdalemuir, whilst part of Staplegorton was annexed to Westerkirk, the other part being added to Langholm. The public school, with accommodation for 106 children, had (1893) an average attendance of 46, and a grant of £69, 6s. 6d. Pop. (1801) 638, (1831) 642, (1861) 537, (1871) 540, (1881) 478, (1891) 454.—*Ord. Surv.*, shs. 10, 16, 1864.

Wester, Loch of. See **WICK**.

Westerton, a mansion in Logie parish, Stirlingshire, in the northern vicinity of Bridge of Allan.

Westertown House, a modern castellated two-storey mansion, with wings and a massive square central tower, in Elgin parish, near the right bank of the Black Burn, 7 miles SW of Elgin town. It belongs to the Duke of Fife.—*Ord. Surv.*, sh. 85, 1876.

Westfield, a village in Clackmannan parish, 2½ miles ESE of Alloa.

Westfield, a village in Rattray parish, Perthshire, on the left bank of the Erich, 2 miles N of Blairgowrie, under which it has a post office.

Westfield, a North British station between Bathgate and Blackston Junction.

Westfield, a plain two-storey mansion in Spynie parish, Elginshire, 3½ miles WNW of Elgin.

West Hall, an ancient mansion, with modern additions, in Oyne parish, Aberdeenshire, 1½ mile ENE of Oyne station, and 3½ miles ESE of Insh. Long a seat of the Horns, and then of the Dalrymple-Horn-Elphinstones, it now belongs to Lady Leith.

Westhaven. See **NEWTON OF PANBRIDE**.

West Highland Railway. This line, extending from Craigendaron on the Clyde, close to Helensburgh, N and NW through the counties of Dumbarton, Perth, Argyll, and Inverness to Fort William—a distance of 99½ miles—may be looked on as a most important continuation of that portion of the North British railway system which formerly only provided for rail and steamer services in connection with the Clyde watering-places. Serving a tract of some 4000 square miles previously entirely without railway communication, and opening up districts of great picturesqueness and interest hitherto very difficult of access, it is the outcome of an earnest attempt on the part of the proprietors through whose lands it

passes to grapple with the Highland question by providing speedy and regular communication between a central point on the west coast and the great markets of the south. Begun in the autumn of 1889, and opened in August 1894, after an expenditure of over £700,000, the line is the longest in Great Britain ever sanctioned by one Act of Parliament. It was constructed by one firm of contractors, and opened in one day.

Leaving the old Helensburgh branch of the North British shortly before reaching Craigendoran, the line rises to a high-level station (23 miles from Glasgow) at the latter place, and turning up the slope to the N of Helensburgh, passes through a long rock-cutting, over 40 feet deep in some places (Upper Helensburgh station, 24½ miles), and emerges high on the hillside overlooking the lower reaches of the Clyde about Greenock, and then turns up the Gareloch, along the whole of the E side of which it goes, commanding from its elevated position an excellent view of the loch the whole way. Stations at Row (26½ miles), Shandon (29½), and Garelochhead (31½) provide accommodation for the most important points along this part of the route. The slope along which the line passes is pleasantly wooded down to the water's edge, and across the loch are the low heights of the peninsula of Rosneath. From Garelochhead the route crosses to the shore of Loch Long, nearly opposite the entrance to Loch Goil, and, still high above sea-level, holds its course up the steep eastern bank of the long, narrow hollow of this arm of the sea, of which there is an excellent view nearly all the way to Arrochar. On the opposite shore rise first the group of rugged heights between Loch Long and Loch Goil, which reach a height of from 2000 to 2500 feet, and are playfully known as Argyll's Bowling Green; then the steep, narrow pass of Glen Croe, and then the huge masses sometimes spoken of as the Arrochar Alps—Ben Arthur or the Cobbler (2891 feet), Ben Ime (3318), Ben Vane (3004), and Ben Voirlach (3092).

From Loch Long the line passes across by the narrow neck between Arrochar and Tarbet to the shore of Loch Lomond; the traffic being provided for by the Arrochar and Tarbet station (42½ miles), half-way between the two places. From Tarbet the route is close to the W bank of Loch Lomond right up to Ardlui station (50½) at the upper end of the loch. All the way most magnificent views, ever changing and ever varying, but always beautiful, are obtained of the great sheet of water stretching away to the E, with the great sentinel Ben steadfastly overlooking the prettily-wooded shores and islands. Nor is the charm of association wanting: on the opposite side of the loch, Inversnaid and its falls remind us of Wordsworth and his Highland Girl, while Wallace's Isle and Rob Roy's Cave recall two national heroes, widely contrasted in their purposes, but yet curiously alike in the cluster of myth that has gathered round their names. Before reaching Ardlui, the steep bank, the railway, and the road all approach so closely to the edge of the loch that a curious little bit of engineering has had to be resorted to in order to afford room for the iron road, and immediately beyond a short tunnel has been necessary. Though only some 50 yards long, it is noteworthy as the single one on the whole line, notwithstanding the rugged and broken character of the country traversed.

Beyond Ardlui the line turns up Glen Falloch by the side of the stream of the same name, and the traveller finds himself among the silent fastnesses of the hills; great mountain masses, with a foreground of lower pastoral land, extending on either side, and culminating, near the NE end of the glen at Crianlarich station (59 miles), in the huge cones of Ben More (3843 feet) and Sobinian (3827); and on the W at the same point in Ben Dhu-Craig (3204) and Ben Oss (3374). Some ancient wood that exists along the lower slopes of the glen is said to be part of the old Caledonian forest, and half way through there is a view on the right of the picturesque Falls of Falloch, with the large basin of Rob Roy's Bath and the smaller one that furnished his Soap Dish. From Crianlarich, after crossing the Callander and Oban

line by one lofty viaduct and Fillan Water by another, the route is up Glen Fillan almost parallel to the sister railway for some 5 miles to Tyndrum (64 miles), whence the northern course is again resumed along the steep side of Ben Odhar (2948 feet). Some 2½ miles beyond Crianlarich, on the left, are the ruins of the little chapel of St Fillan, which, with the adjacent sacred pool, used in the middle ages to be rather celebrated in connection with the treatment of lunatics. A little farther on, beside the Free church, on the same side, is the field of Dalry or Dail Righ, where Bruce and the band that followed him after the battle of Methven were beset by a swarm of the followers of John of Lorn, and where, though the party made good their retreat, the king himself was compelled to leave behind the cloak fastening, which is known as the 'Brooch of Lorn.' In the hill at Tyndrum, to the left of the station, workings were at one time opened for the extraction of lead ore, but they have long since been abandoned.

Beyond Ben Odhar two viaducts and a curious U-shaped curve carry the line across the entrance to the hollow between Ben Chaisteil and Ben Doran—a glen through which access may be had to the upper parts of Glen Lyon, Loch Lyon itself being only some 6 miles distant across the pass. Round the curve the course is by a narrow cut in the steep side of Ben Doran, and at length Bridge of Orchy is reached (71½ miles), which used to be considered the last boundary of the civilised world in this direction. This is the centre of the district which the Gaelic bard Rob Don has rendered so celebrated—Glen Orchy itself stretching away to the SW, with beyond it the great mountain masses that rise around Loch and Glen Etive, and farther N the peaks that overshadow Glencoe. The whole of the district to the W and NW is deer forest; the one closest at hand being the well-known Black Mount belonging to the Marquis of Breadalbane, whose shooting-lodge for it is seen nestling among wood on the N shore of the little Loch Tulla, which lies on the left. After the hollow of Tulla Water has been followed for some miles, the great boggy table-land of Moor of Rannoch may be said to be entered on at Gortan, and thence for 10 miles the line may be said to be almost floated over the surface of the morass pretty much on the principle on which George Stevenson constructed his famous way across Chat Moss. Bare and exposed, however, as this moorland is in all its 20 miles of length and as many in breadth, it is not by any means the scene of desolation that is sometimes supposed. It may, to one passing painfully over it on foot, have seemed as it has been said, 'the dreariest tract of its kind in Scotland—an open, monotonous, silent, black expanse of desert, a sable sea of moss;' but it certainly looks otherwise as one passes across it comfortably by rail. Even if it be as R. L. Stevenson has described it, a 'country lying as waste as the sea,'* it has some of the charm of the sea's variety and play of light and colour. Even if the moorland itself be open, silent, solitary, the eye is drawn across it in all directions to the fine mountain screens that shut it in; away to the E the sharp cone of Schiehallion looks over the lower nearer hills; to the NE the great straight out of Loch Erich is well marked, with, rising over it, the huge Ben Alder (3757 feet) and its curious conical outlier Ben Bheoil (3333); away to the NW are the jagged peaks about Ben Nevis and Mamore, and to the W those of the Black Corries and Glencoe. At Rannoch station (87½ miles) Loch Lydoch is on the left; and Gaur Water, which flows from this to Loch Rannoch, having been crossed, the line bends thence to the NW, and passing Loch Ossian (1269 feet above sea-level), the highest loch of any size in Scotland, reaches the summit-level of 1350 feet. It then turns northward to the E of the long, narrow, steep-sided Loch Treig, at first high above the level of the water, but gradually descending during a 5½-mile run till it has almost reached the level of the loch at the lower

* In *Kilnappad*, where, however, he brings a body of horse soldiers across it. There are probably few parts of the moor where horsemen could advance in safety 100 yards.

end, whence it passes among the fine examples of great glacial moraines that there abound to the side of the Spean at Inverlair (104½ miles). From this point the course turns off at right angles westward and follows the hollow of the Spean by Roy Bridge (110½)—from which station convenient access is now obtained to Glen Roy and its famous parallel roads—to Spean Bridge (113½), and then passes SW by Inverloch Castle to Fort William (122½). The scenery along the rocky gorge, through which the Spean frets and foams, is fine and interesting, and from this part of the route excellent views are obtained of Ben Nevis and the surrounding hills. The works at Fort William necessitated the destruction of a considerable part of the fort itself, past which a small loop-line to Banavie establishes a connection with the S end of the Caledonian Canal. This branch will ultimately form the first part of an extension of the railway, for which an Act has been obtained, westward by Lochs Eil and Morar to Mallaig (on the Sound of Sleat, near the entrance to Loch Nevis), which will, it is hoped, become a centre for fishing and general trade for the Northern Hebrides.

Westquarter, a village in Glassford parish, Lanarkshire, 2 miles NE of Strathaven. Westquarter House is the seat of Jn. Miller Wilson Jackson, Esq., of Hall-hill (b. 1861; suc. 1865). Pop. (1881) 389, (1891) 384.—*Ord. Sur.*, sh. 23, 1865.

Westraw House. See PETTINAIN.

Westray, one of the NW islands of the Orkney group. It lies 10½ miles NNE of Costa Head, the nearest point of Pomona; and 4 NNE of the nearest point of Rousay, from which it is separated by Westray Firth. Within 2 miles of its E and SE coasts lie Papa-Westray, Eday, Pharay, and Pharay Holm. Its length, from NW to SE, is 10½ miles; and its breadth varies between ½ mile and 6½ miles. The only safe harbour is that of Pierowall, on the E coast, nearly opposite the S end of Papa-Westray. The chief headlands are Noup Head on the NW, Aiker Ness on the N, Spo Ness on the E, Weather Ness on the SE, Rap Ness on the S, and Berst Ness on the SW. The coast is, in general, rocky; and, over part of the W, consists of magnificent precipices, frequented by vast flocks of sea-fowl. A ridge of hills extends along the W of the broader part of the island, and attains 343 feet at Couters Hill, 369 at Knucker Hill, 355 at Gallo Hill, 556 at Fitly Hill, and 256 at Skea Hill; but the rest of the surface is pretty level. The soil of the arable lands, which probably do not amount to one-fifth of the area, is variably pure sand, a mixture of sand and clay, a black mossy mould, a rich loamy black mould, and a mixture of black mould and sand. At the head of the Bay of Pierowall is a village of the same name with an inn, and a post office with money order, savings bank, and telegraph departments. In a small cavern, called the 'Gentleman's Cave,' in the bluff rocky coast of Rap Ness, several Orkney Jacobites lay concealed for several months in 1746. They were eagerly but vainly searched for throughout Orkney by a party of royal troops; and, while in the cave, they depended for their daily food upon the precarious means of a single person's stealthy visits to their retreat. Their houses were destroyed by the baffled military; but afterwards, when the excitement occasioned by the rebellion passed away, these were replaced, at the expense of Government, by others of better structure. In several places along the shores are graves or tombs of a very ancient date; and in one place is a high monumental stone. **NOLTLAND CASTLE**, noticed separately, is the chief antiquity; and Brough is the principal mansion. The island was anciently divided into the parishes of East Westray, West Westray, and North Westray or Ladykirk; but all these, together with the island of Papa-Westray, now form only one parish.

The parish is in the presbytery of North Isles and the synod of Orkney; the living is worth £251. The parish church, in the centre of Westray island, was built in 1845, and contains upwards of 800 sittings. Other places of worship are Rap Ness chapel of ease,

Papa-Westray Free church, Westray Free church station, Westray U.P. church (1823; 440 sittings), and Westray Baptist chapel (1807; 450 sittings). Four public schools—East Side, Papa-Westray, Pierowall, and West Side—with respective accommodation for 90, 80, 180, and 75 children, had (1893) an average attendance of 55, 51, 129, and 76, and grants of £72, 4s., £64, 7s. 6d., £170, 1s. 6d., and £86. Valuation of parish (1884) £5406, (1893) £4573. Pop. of Westray island (1831) 1702, (1861) 2151, (1871) 2090, (1881) 2200, (1891) 2108; of parish (1801) 1624, (1831) 2032, (1861) 2545, (1871) 2460, (1881) 2545, (1891) 2445.

Westruther, a village and a parish of Berwickshire. The village stands 705 feet above sea-level, 5½ miles N by W of Gordon station, 6½ WNW of Greenlaw, and 7½ ENE of Lauder. It has a post office, a library, a temperance society, and a Good Templar lodge.

The parish, containing also Houndslow village, 1½ mile S by W, formed part of Hume till the Reformation, and then of Gordon till 1647. It is bounded N and NE by Longformacus, E by Greenlaw, SE by Górdon, SW by Legerwood, and W and NW by Lauder. Its utmost length, from N to S, is 6½ miles; its utmost breadth, from E to W, is 5 miles; and its area is 22½ square miles or 14,643½ acres, of which 13½ are water. **EDEN WATER** flows 2 miles east-north-eastward along the Gordon boundary; **BLACKADDER WATER**, formed by several headstreams that rise in the N of the parish, winds 2½ miles south-south-eastward along the Greenlaw boundary; and **BOONDREIGH** or **Brunt Burn** runs 5½ miles south-south-westward along or close to nearly all the Lauder boundary. Lying debatably between the Lammermuir and Lauderdale districts of Berwickshire, the surface sinks in the SE to 590 feet above sea-level, and rises thence to 735 feet near Hyndberry, 856 near Wedderlie, 1242 at Flas Hill, 1255 at Raelcugh Hill, and 1466 at Twinlaw Cairns near the northern border—bleak, cheerless uplands these last, but commanding brilliant and extensive prospects of the Merse and Teviotdale. Greywacke, often passing into greywacke slate, is the predominant rock in the N, red sandstone in the S. The latter has been largely worked for building material; and slate was quarried at Bruntaburn about the beginning of the 19th century. The soil of the arable lands varies much both in depth and in quality, and comprises clay, loam, gravel, and moorish mould, being mostly light and incumbent on a rocky or gravelly subsoil. Nearly 1000 acres are under wood; about 180 are in a state of moss; and the rest is either arable or pastoral. Antiquities, other than those noticed under **EVERLAW** and **GIBB'S CROSS**, are the huge Twinlaw Cairns, faint vestiges of two camps on Raelcugh farm and Harelaw Muir, and sites or remains of three pre-Reformation chapels and several peel-towers. The two Cairns are said to commemorate the death, by each other's hands, of the twin-brothers Edgar, who, ignorant of their kinship, resolved to settle by single combat the battle impending between the Scots and the Saxon invaders. A ballad, entitled the *Battle of Twinlaw* (the worst perhaps that was ever composed), is quoted in the *New Statistical Account* (1834) as having 'been known here for at least a century and a half.' John Veitch, the brother of that William Veitch whose Life was written by M'Crie, and himself a preacher of great eminence, was a heritor in Westruther, and its first minister. He died in 1703. Principal estates are **SPOTTISWOODE**, **BASSENDEN**, and **Wedderlie**, the seat of Lord Blantyre; and the first includes more than the half of the parish. Westruther is in the presbytery of Earlstoun and the synod of Merse and Teviotdale; the living is worth £150. The parish church, built in 1840, contains 380 sittings. A Free church contains 270 sittings; and the public school, with accommodation for 128 children, had (1893) an average attendance of 54, and a grant of £53, 14s. 6d. Pop. (1801) 779, (1831) 830, (1861) 786, (1871) 784, (1881) 671, (1891) 615.—*Ord. Sur.*, sh. 25, 1865.

West Water, a troutful stream of Lethnot, Edzell, and Stracathro parishes, Forfarshire, rising at an alti-

tude of 2680 feet on the N side of Ben Tirran, and winding 23 miles east-south-eastward, till, after a descent of 2560 feet, it falls into the North Esk near Stracathro House.—*Ord. Sur.*, shs. 65, 66, 57, 1868-71.

Weydale, a place, with a post office and a public school, in Thurso parish, Caithness, $3\frac{1}{2}$ miles SSE of the town.

Whale Firth, a sea-inlet on the W coast of Yell island, Shetland, striking 4½ miles west-south-westward, and having an average breadth of only $\frac{1}{2}$ mile.

Whalsey, an island of Nesting parish, Shetland, $1\frac{1}{2}$ mile E of the nearest point of the Mainland, and $18\frac{1}{2}$ miles NNE of Lerwick, under which it has a post office, with money order, savings bank, and telegraph departments. With a rocky coast, it measures 5½ miles from NE to SW, has a maximum breadth of $2\frac{1}{2}$ miles, consists almost entirely of gneiss, is studded with ten little fresh-water lochs, rises to 393 feet at the Ward of Clett, contains one sheep farm, and has a free light soil, capable of considerable cultivation, but in many places severely 'scalped.' In order to provide a boat shelter for the fishing fleet, Government in 1894 sanctioned a grant of £1650 to aid in the erection of a breakwater at Symbister. Symbister House, a stately mansion of Aberdeenshire granite, built in the first half of the nineteenth century at a cost of £20,000, is the property of William Arthur Bruce, Esq. (b. 1863; suc. 1873). The Established church was raised to *quoad sacra* status in 1869, its minister's stipend being £125, and the parish including the Out Skerries, etc.; and there are public schools of Brough and Livister. Pop. of island (1841) 628, (1861) 728, (1871) 854, (1881) 870, (1891) 927; of *q.s.* parish (1881) 1027, (1891) 1094. See the Rev. John Russell's *Three Years in Shetland* (Paisley, 1887).

Whaaphill, a railway station, with a post and telegraph office, in Kirkinner parish, Wigtownshire, $3\frac{3}{4}$ miles S by W of Wigtown.

Whiffet. See COATERIDGE.

Whim House, a plain three-storey mansion in Newlands parish, N Peeblesshire, 7 furlongs NNE of Lamancha station, and 5 miles S by W of Penicuik. It was built by the third Duke of Argyll, and two years after his death in 1761, was purchased and enlarged by James Montgomery, afterwards Lord Chief Baron of Exchequer, who made it his country residence. See *SROBO.*—*Ord. Sur.*, sh. 24, 1860.

Whinnyleggat, a place, with a public school, in Kirkcudbright parish, 3 miles NE of the town.

Whinyeon, Loch. See TWYNHOLM.

Whistlefield, an inn near the E shore of Loch Eck, Argyllshire, 7 miles SSE of Strachur.

Whistlefield, a place with an inn in Row parish, Dumbartonshire, $1\frac{1}{2}$ mile N by W of Garelochhead. Standing at the crown of the ridge between the Gare Loch and Loch Long it commands a striking view of both lochs.

Whitadder Water, a stream whose source is in East Lothian, but most of whose course is in Berwickshire. It rises, at an altitude of 1100 feet near the middle of the hilly parish of Whittinghame, close on the watershed or summit-range of the broad-based Lammermuirs; and has a course of $6\frac{1}{2}$ miles, chiefly south-south-eastward, and partly eastward to St Agnes, where it receives Bothwell Water on its left bank, and enters Berwickshire. During this brief connection with Haddingtonshire, it is a cold, moorland streamlet, and flows partly through Whittinghame, and partly between that parish and Berwickshire on its right bank, and Stenton and Innerwick on its left. After entering Berwickshire it achieves a distance of 12 miles in five bold sweeps in very various and even opposite directions; and it then runs prevailing eastward, over a distance of 15 miles, to the Tweed at a point $2\frac{1}{2}$ miles above Berwick. Its principal tributaries are Dye Water, which enters it on the right side near the middle of Longformacus, and the Blackadder, which enters it at the village of Allanton in Edrom. Its entire length of course is nearly 34 miles. From the point of its debouching into the Merse, or over about four-fifths of its course,

in Berwickshire, it is a stream of much gentle beauty. It traverses a country which is cultivated like a garden; it is overlooked and highly adorned at frequent intervals by fine mansions and parks; it runs almost constantly in the curving, the ever-sinuous line of beauty; it very generally has a deeply excavated path through earth or soft rock, so as to form a lowland dell, a gigantic and sometimes precipitous furrow, tufted up the sides with wood; and, though prevailing destitute of decided picturesqueness or romance, it has a fair aggregate amount of landscape. It achieves little of its fall in races and none in leaps, but is nearly everywhere a rapid stream, brisk and cheery in its movement. In Berwickshire it bounds or traverses the parishes of Cranshaws, Longformacus, Abbey St Bathans, Duns, Bunkle, Edrom, Chirnside, Foulden, Hutton, and Mordington. Like most of the streams which descend from either side of the Lammermuirs, it is subject to sudden freshets; and it rises in ordinary maximum about 9 feet above its usual level, and in extraordinary or rare floods as high as 15 feet. It is still an excellent trouting-stream, though not what it was in former years.—*Ord. Sur.*, shs. 33, 34, 26, 1863-64. See Sir Thomas Dick Lauder's *Scottish Rivers* (Edinb. 1874).

Whitburgh, a mansion of 1811 in Humberie parish, Haddingtonshire, $2\frac{1}{2}$ miles ESE of Ford.

Whitburn, a village and a parish of SW Linlithgowshire. The village stands, 620 feet above sea-level, near the northern verge of the parish, $3\frac{3}{4}$ miles SSW of Bathgate, 9 furlongs W by S of Whitburn station on the Morningside section of the North British, and $3\frac{1}{2}$ miles N by W of Breich station on the Caledonian, this being $21\frac{1}{2}$ miles WSW of Edinburgh and $27\frac{1}{2}$ E by S of Glasgow. A police burgh since 1862, it presents a well-built regular appearance, and has a post office, with money order, savings bank, and telegraph departments, a branch of the Commercial Bank, a gaswork, a reading-room, a public coffee-house and reading-room (the gift of Lady Baillie), a public hall, a cemetery, and bowling and curling clubs. Considerable endowments, bequeathed by the late Mr Wilson, are now devoted by the School Board to the encouraging of higher education in the parish by means of scholarships and bursaries. Places of worship are the parish church, the Free church, and the U.P. church. The first was erected and partly endowed by public subscription in 1718, and was raised from a chapel of ease to parochial status in 1730. A strong Secession congregation early arose, in consequence of the parish church being subjected to the law of patronage, although the parishioners had subscribed for it on the condition of their having a vote; and here as elsewhere the Secession soon divided into Burghers and Anti-burghers. The first parish minister was the Rev. Alex. Wardrope, an eminent preacher, who took an active share in the 'Marrow Controversy.' Among his successors were William Porteous, D.D. (1735-1812), from 1760 to 1770, who planned the Glasgow Society of the Sons of the Clergy, and published several works; and the Rev. Mr Baron (1735-1803), from 1770 to 1779, author, and afterwards professor of moral philosophy at St Andrews. John Brown (1754-1832) was Burgher minister from 1777; and here was born his son, Professor John Brown, D.D. (1784-1858), the well-known Biblical expositor. Professor Archibald Bruce (1746-1816) was Anti-burgher minister from 1768 till 1806. He was author of *Free Thoughts on the Toleration of Popery*, and many other works, and at Whitburn received a visit about 1783 from Lord George Gordon. Pop. of village (1881) 1200, (1891) 1185, of whom 608 were males. Houses (1891) inhabited 263, vacant 30.

The parish, containing also the town of FAULDHOUSE, the villages of LONGRIDGE and East BENHAR, with part of BLACKBURN, and the stations of BENTS, CROFTHEAD, and Fauldhouse, was disjoined from Livingston in 1730, but formed a separate preaching station so early as 1628. It is bounded N by Bathgate and Livingston, E by Livingston, SE by West Calder in Edinburghshire, and W and NW by Shotts in Lanarkshire. Its utmost length, from E by N to W by S, is $6\frac{1}{2}$ miles; its breadth

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increases westward to $3\frac{3}{4}$ miles; and its area is $15\frac{1}{2}$ square miles or $9807\frac{1}{2}$ acres, of which $83\frac{1}{2}$ are water. The river ALMOND, coming in from Shotts, flows $7\frac{1}{2}$ miles east-by-northward—for $2\frac{1}{2}$ miles across the north-western, and for 1 mile (near Whitburn station) across the northern interior, elsewhere along the northern boundary. How or Blairmuchole Burn flows $2\frac{3}{4}$ miles east-north-eastward along all the north-western and part of the northern boundary to the Almond, another of whose affluents, BREICH Water, flows $5\frac{1}{2}$ miles east-north-eastward along all the Midlothian border; whilst the interior is drained by Cultrig or White Burn, Latch Burn, Bickerton Burn, and other rivulets. Along the Almond the surface declines to 500 feet above sea-level; and thence it rises to 695 near Bents station, 785 near Turnhigh, 852 near Benhar Colliery, and 951 near Fauldhousehills. It thus presents no conspicuous eminence; but much of the western district is high, bleak, mossy upland—Polkemmet and Fauldhouse Moors. The rest of the parish is comparatively low and level, has mostly been worked into a state of high cultivation, and exhibits a fair degree of artificial embellishment. Trap rock, occurring in veins, bed-like masses, and isolated protrusions, forms numerous small knolls, and caps some of the higher grounds. The other rocks belong to the Carboniferous formation, and possessing great economical value, are so extensively and variously worked as to give a distinctive character to the industry of a large proportion of the population. Sandstone of several qualities is largely quarried; coal, in thick seams, has been worked since the early part of the 18th century; and black-band ironstone, which yields from 27 to 33 per cent. of pig-iron, and began to be mined about the year 1835, has since been worked with such vigour as to occasion a large tract in the south-west to pass from a state of bleak solitude to one of busy industry and thronging population. The soil in some parts is a mixture of earth and moss, incumbent on strong clay or till; and in others is so stiff a clay as to derive little benefit from draining, but generally is a clayey loam, which well repays the labour of the husbandmen. Donald Cargill is said to have preached at Whitburn, on the Sabbath before his excommunication of Charles II. in the Torwood, Sept. 1680. A bog at Cowhill has yielded two Roman coins. POLKEMMET, noticed separately, is the principal mansion. In the presbytery of Linlithgow and the synod of Lothian and Tweeddale, this parish, since 1872, has been ecclesiastically divided into Whitburn and Fauldhouse, the former a living worth £296. Five schools, with total accommodation for 1329 children, had (1893) an average attendance of 861, and grants amounting to £855, 8s. 4d. Pop. (1801) 1537, (1831) 2075, (1861) 5511, (1871) 6911, (1881) 6326, (1891) 5782, of whom 2313 were in Whitburn ecclesiastical parish.—*Ord. Sur.*, sh. 31, 1867.

Whitebridge, a post and telegraph office under Inverness, on the left bank of the Foyers, 10 miles NE of Fort Augustus.

Whitecairns, a place in Belhelvie parish, Aberdeenshire, 3 miles SE of New Machar station. It has an inn and a post office under Aberdeen.

White Cart. See CART.

White Coomb. See SKENE, LOCH.

White Esk. See Esk.

Whitehaugh, an old mansion, enlarged by two wings in 1838, in Tullynessle and Forbes parishes, Aberdeenshire, near the left bank of the Don, $4\frac{1}{2}$ miles NE of Alford. Its owner is the Rev. Wm. Forbes-Leith, M.A. (b. 1833; suc. 1875).—*Ord. Sur.*, sh. 76, 1874.

Whitehill, a large Jacobean mansion in Carrington parish, Edinburghshire, near the right bank of Dalhousie Burn, 1 mile SSE of Hawthornden station. Built in 1844 from designs by W. Burn, it is the seat of Rt. Geo. Wardlaw-Ramsay, Esq. (b. 1852; suc. 1882).—*Ord. Sur.*, sh. 57, 1857. See TILLCOULTRY and Jn. Small's *Castles and Mansions of the Lothians* (Edinb. 1883).

Whitehill. See DEER, NEW.

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Whitehills, a fishing village in Boyndie parish, Banffshire, 3 miles WNW of Banff, under which it has a post office, with money order, savings bank, and telegraph departments. It has a public school, and was formed into a special water-supply district in 1879. Pop. (1871) 823, (1881) 920, (1891) 1097.—*Ord. Sur.*, sh. 96, 1876.

Whitehouse. See TOUGH.

Whitehouse, a post office in Kilcalmonell parish, Argyllshire, on the SE shore of West Loch Tarbert, 6 miles SSW of Tarbert.

Whitekirk and Tynninghame, a coast parish of NE Haddingtonshire, whose church stands at the small village of Whitekirk, $4\frac{1}{2}$ miles SE of North Berwick, $7\frac{1}{2}$ WNW of Dunbar, and 4 N by E of the post-town, Prestonkirk (East Linton). Comprising the ancient parishes of TYNNINGHAME, ALDHAM, and Hamer or Whitekirk, it is bounded NW by North Berwick, NE by the German Ocean, SE by Tynninghame Bay and Dunbar, and SW and W by Prestonkirk. Its utmost length, from NNW to SSE, is 5 miles; its utmost breadth is $4\frac{1}{2}$ miles; and its area is $715\frac{1}{2}$ acres, of which 822 $\frac{1}{2}$ are foreshore and 43 $\frac{1}{2}$ water. The river TYNE, entering from Prestonkirk, first goes $2\frac{1}{2}$ miles north-eastward across the southern district, and then meanders $2\frac{1}{2}$ miles north-north-eastward through Tynninghame Bay to its mouth in the German Ocean; whilst the East PEFFER Burn, after tracing $4\frac{1}{2}$ furlongs of the Prestonkirk boundary, flows 3 miles north-eastward through the northern interior, and falls into the sea at a point $1\frac{1}{2}$ mile NW of Tyne Mouth. The coast, from the mouth of the Tyne to that of the Peffer, is a sandy tract, diversified only by the small headland of Whitberry and Ravenshough Craig; but from the mouth of the Peffer to the boundary with North Berwick, it is a series of rocky ledges and rugged cliffs, rising in some places to a height of 100 feet. Whitekirk Hill (182 feet) on the north-western border, and Lawhead (100) $1\frac{1}{2}$ mile to the SSE, are the highest ground in the interior, and command an exquisite prospect over the Lothians, the German Ocean, the Firth of Forth, and the coast of Fife. A belt of flat rich haugh extends S of Lawhead from nearly the western boundary to the coast; the rest of the surface either declines slowly through Whitekirk Hill and Lawhead, and is otherwise so gently featured as to possess all the softness, without any of the monotony, of a luxuriant plain. The entire parish, as seen from Lawhead, exhibits surpassing opulence of natural beauty and artificial embellishment. The rocks are partly eruptive, but chiefly red sandstone, red clay, ironstone, and red and green slaty clays. The soil, on the haugh lands, is alluvium; on the gentle slopes adjacent to the haughs is mostly a dark-coloured loam; and on the highest grounds, is thin and shallow but good. About two-thirds of the entire area are in tillage; and the other third, with slight exception, is either in grass or under wood. The trees on the TYNNINGHAME estate are especially fine, and cover a very large area; but thousands of them were felled by an unusual storm in 1881. Of the three ancient churches of TYNNINGHAME, ALDHAM, and Hamer, the two first have been noticed separately. Hamer, or 'the greater ham,' in contradistinction to Aldham, or 'Auld-ham,' took its present name of Whitekirk from the whiteness of its kirk. The parish forms the central part of the united district, and lay, of course, between Aldham and Tynninghame. The church, whose interior was beautifully restored in 1885, was dedicated to the Virgin Mary, and from the 12th century till the Reformation belonged to the monks of Holyrood. It early became a resort of pilgrims; and on pretext of a pilgrimage to it, with the alleged purpose of performing a vow for the safety of her son, the dowager-queen of James I. outwitted Chancellor Crichton, and carried off James II. in a chest to Stirling (1438). Prior to this, in 1356, when Edward III. invaded East Lothian, some sailors of his fleet entered the church. One of them rudely plucking a ring from the Virgin's image, a crucifix fell from above, and dashed out his brains; and the ship, we are

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told, which was stored with the spoils of this and of other shrines, was wrecked off Tyne Mouth by a vehement storm. It was probably on this account that the famous Æneas Silvius, known to history as Pope Pius II., made a pilgrimage hither, just eighty years later, on landing in Scotland after a perilous voyage. He walked ten miles barefoot over the frozen ground, and caught thereby a chronic rheumatism, which lasted to the end of his days. The present church, which certainly dates from pre-Reformation times, has a square tower; and in the churchyard is a large stone slab, removed from the chancel some years ago in the course of repairing, and bearing the life-size effigy of an ecclesiastic. Behind the church is—what is rare in Scotland—the ancient barn in which the monks stored their grain, and which is absurdly affirmed to have given a two-nights' lodging to Queen Mary. In 1890 the south transept of the church was restored and the churchyard enlarged. Aldham was united to Tynninghame in 1619, and Whitekirk in 1761. At Sealcliff, overlooking the sea, stood a chapel, whose ruins are still extant. Mansions, separately described, are NEWBYTH, SEALCLIFF, and TYNNINGHAME. This parish is in the presbytery of Dunbar and the synod of Lothian and Tweeddale; the living is worth £362. Two public schools, Tynninghame and Whitekirk, with respective accommodation for 122 and 100 children, had (1893) an average attendance of 71 and 80, and grants of £58, 2s. and £61, 1s. 4d. Valuation (1893) £9917, 6s. Pop. (1881) 1051, (1891) 933.—*Ord. Sur.*, shs. 33, 41, 1863-57. See A. T. Ritchie, *The Churches of St Baldred* (1883); and P. Hatley Waddell, *An Old Kirk Chronicle* (1893).

Whiteknow, an estate, with a mansion, in Hutton parish, Dumfriesshire.

Whitemire, a village, with a post office, in Dyke parish, Elginshire, 3½ miles S of Brodie station.

Whiteness. See TINGWALL.

Whiten Head (Gael. *Cetuna Geal Mor*), a towering white headland on the N coast of Sutherland, in Durness and Tongue parishes, between Loch Eriboll and Tongue Bay. Rising steeply from the sea to heights of 603 and 935 feet, it ascends inland to BEN HUTIG (1340); and its base has been hollowed out by the waves into a multitude of remarkable caverns.—*Ord. Sur.*, sh. 114, 1880.

Whiterashes, a place with a post office under Aberdeen, a public school, and an Episcopal church (1850), near the mutual border of New Machar and Uduy parishes, Aberdeenshire, 3½ miles NW of New Machar station.

Whiterigg, a village with a railway station in New Monkland parish, Lanarkshire, 2½ miles NE of Airdrie, under which there is a post office. Pop. (1881) 553, (1891) 640.

Whithorn, a town and a parish of SE Wigtownshire. A royal and police burgh, the town stands nearly in the centre of the parish, 2 miles inland, and 220 feet above sea-level. By road it is 3½ miles NW of ISLE OF WHITHORN, 32 ESE of Stranraer, and 11 S of E of Wigtown; and its station, the terminus of the Wigtownshire railway (1875-77), is 12¼ miles from the county town. The main street, extending 5½ furlongs north-by-eastward, is narrow at the foot or northern extremity, but very broad towards the middle, where a rivulet—now covered over—crosses it, and where it sends off two transverse streets—the Pend, leading to the parish church, and the Free Church (or Rotten) Row. At the upper end it narrows again into the 'Port Mouth,' and then forks into Glasserton Row and Isle Row, running W and SE respectively. Great improvements have been effected since the beginning of the 19th century. The old thatched hovels have made way for good slated houses, and the streets are no longer grass-grown. There are a post office, with money order, savings bank, and telegraph departments, branches of the Clydesdale and National Banks, 2 hotels, a gaswork, a bowling green, Belmont Hall, a weekly market on Thursday, and a cattle market on the Thursday after the first Friday of every month. The new Town Hall, opened in 1885,

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accommodating about 500 persons, and supplanting a former town hall dating from 1814, is a plain but substantial structure erected by public subscription at an expense of £1100. The plain parish church, built in 1822, contains 800 sittings, and has a later square tower; the Free church was built soon after the Disruption. Other places of worship are a U.P. church, a Reformed Presbyterian church, and the Roman Catholic iron church of SS. Ninian, Martin, and John (1882);



Seal of Whithorn.

120 sittings). The burgh is governed by a provost, 2 bailies, a treasurer, and 6 councillors; and prior to the Redistribution Act of 1885 it united with Wigtown, New Galloway, and Stranraer in returning a member to parliament. As a royal burgh, it claims to have got its earliest charter from Robert Bruce; and it rests its appeal on a confirmatory charter granted by James IV. in 1511. Corporation revenue (1833) £153, 8s., (1840) £230, 11s., (1874) £228, (1884) £80, (1893) £15. Municipal constituency (1893) 332. Valuation (1885) £3817, (1893) £3841, plus £75 for railway. Pop. (1831) 1305, (1851) 1652, (1861) 1623, (1871) 1577, (1881) 1653, (1891) 1403, of whom 746 were females. Houses (1891) inhabited 298, vacant 27, building 2.

Whithorn is mentioned by Ptolemy, the Alexandrian geographer, in the first half of the second century, A.D., as 'Leukopibia,' a town of the Novante. *Leukopibia* is probably a corruption of the Greek *Leuk' oikidia*, and so synonymous with the Latin *Candida Casa*, and the old English *Hwīt-aern*—all of them signifying the 'White house.' It thus is a place of hoar antiquity, and moreover is memorable as the home—perhaps, too, the birthplace—of St Ninian, the first known apostle of Scotland. The 'St Ringan' of Lowland Scotch, he was born of royal parentage on the shores of the Solway Firth about the middle of the 4th century. Of studious and ascetic habits, he was fired by the Holy Spirit to make a pilgrimage to Rome, which he reached by way of the Gallican Alps, and where he was consecrated bishop by the Supreme Pontiff. On his homeward journey he paid a visit to St Martin at Tours, and after his arrival in Scotland founded the 'Candida Casa,' or church of Whithorn, the first stone church erected in Scotland, dedicating it to St Martin, who had just died (397). Later, he laboured successfully for the evangelisation of the Southern Picts, and in 432 (according to the Bollandists) died, 'perfect in life and full of years,' and was buried in his cathedral church at Whithorn. His festival falls on 16 Sept. Though the facts of his life, as well as independent testimonies, show that Christianity existed in Scotland prior to St Ninian, yet his apostolate is the first distinct fact in the history of the Scottish Church. Even of Ninian himself we can gather little that is definite from the Latin life by St Ailred (b. 1109; d. 1166), which, while good in style, is almost worthless as an historical record. (See Bishop Forbes' 'Life of St Ninian' in vol. v. of *The Historians of Scotland*, Edinb. 1874.) Under the name

of the 'great monastery of Rosnat,' St Ninian's church became known as a great seminary of religious and secular instruction; and to Cairnech, one of its bishops and abbots, is ascribed the introduction of monachism to Ireland. A bishopric of Whithorn was founded by the Angles in 727, but came to an end about 796, the see having been filled by five bishops; nor was it till the reign of David I. (1124-53) that Fergus, lord of Galloway, re-established the see of Galloway, and founded here a Premonstratensian priory, whose church became the cathedral, and contained the shrine of St Ninian.

This bishopric comprehended the whole of Wigtonshire, and by far the greater part of Kirkcudbrightshire, or all of it lying W of the river Urr; and it was divided into the three deaneries of the Rhinns, Farines, and Desnes, lying westward respectively of Luce Bay, of the Cree, and of the Urr, and corresponding proximately, though not quite, to the limits of the respective existing presbyteries of Stranraer, Wigton, and Kirkcudbright. Gilla Aldan, the first bishop, was consecrated by the Archbishop of York; and his successors looked to that archbishop as their proper metropolitan till at least the 14th century. The bishops of Galloway afterwards, like all their Scottish brethren, became suffragans of St Andrews; but on the erection of Glasgow, in 1491, into an archbishopric, they, along with the bishops of Argyll, Dunkeld, and Dunblane, passed under the surveillance of that arch see, and on account of their being the chief suffragans, they were appointed vicars-general of it during vacancies. The canons of Whithorn priory formed the chapter of the see of Galloway, their prior ranking next to the bishop; but they appear to have been sometimes thwarted in their elections, and counter-worked in their power, by the secular clergy and the people of the country. The revenues of the bishopric, which had previously been small, in the beginning of the 16th century, were greatly augmented by the annexation to them of the deanery of the chapel-royal of Stirling, and some years later, by that of the abbey of Tongland. In a rental of the bishopric, reported in 1566 to Sir William Murray, the Queen's comptroller, the annual value, including both the temporality and the spirituality, was stated to be £1357, 4s. 2d. Though the revenues were in a great measure dispersed between the date of the Reformation and that of James VI.'s revival of Episcopacy, and though they again suffered diminution in 1619 by the disavowment of the deanery of the chapel-royal, yet they were augmented in 1606 by the annexation of the priory of Whithorn, afterwards by that of the abbey of Glenluce, and in 1637 by the accession of the patronage and tithes of five parishes in Dumfriesshire which had belonged to the monks of Kelso. At the Revolution the net rental amounted to £5634, 15s. Scots, and exceeded that of any other see in Scotland, except the archbishoprics of St Andrews and Glasgow. In 1878 the Roman Catholic bishopric of Galloway was revived.

Excepting that of Maurice, who swore fealty to Edward I. in 1296, the names of none of the early priors of Whithorn have survived. James Beaton, who was prior in 1503, and uncle of Cardinal Beaton, acted a conspicuous, and in some particulars an inglorious, part in the history of his country, and rose to the highest offices in both Church and State—becoming successively, in the one, bishop of Galloway, archbishop of Glasgow, and archbishop of St Andrews; and in the other, Lord Treasurer and Lord Chancellor of the kingdom. Gavin Dunbar, the next prior of Whithorn, was tutor to James V., and rose to be archbishop of Glasgow, Lord Chancellor of the kingdom, and, during one period of the King's absence in France, one of the Lords of the Regency. At the Reformation the rental of the priory, as reported to Government, amounted to £1016, 8s. 4d. Scots, besides upwards of 15 chalders of bere and 51 chalders of meal. The property was given by James VI. to the bishops of Galloway, and it afterwards followed the same fate as that of the parish church of Whithorn.

Pilgrimages, at all times and by all classes of persons,

were made from every part of Scotland to the shrine of St Ninian at Whithorn. In 1425 James I. granted a protection to all strangers coming into Scotland as pilgrims to the shrine; and in 1506 the Regent Albany granted a general safe-conduct to all pilgrims hither from England, Ireland, and the Isle of Man. Many of the most distinguished personages of the kingdom, including kings, queens, and the highest nobles, visited Whithorn on pilgrimage. In 1478, Margaret, the queen of James III., made a pilgrimage hither, accompanied by six ladies of her chamber, who were furnished on the nonce with new livery gowns. Among other charges in the treasurer's account, for articles preparatory to her journey, are 8 shillings for 'panzell crelis,' or panniers, 10 shillings for 'a pair of Bulgis,' and 12 shillings for 'a cover to the queen's cop.' James IV. made pilgrimages to Whithorn, generally once and frequently twice a year, through the whole period of his reign. He appears to have been accompanied by his minstrels and a numerous retinue; he gave donations to priests, to minstrels, and to pilgrims, and, through his almoner, to the poor; and, in his journey both hither and back, he, in addition, made offerings at various churches on his way. In 1507, after his queen had recovered from a menacing illness, he and she made a joint pilgrimage, and occupied 31 days from leaving Stirling till they returned. They were accompanied by a large retinue, and progressed in a style of regal pomp. In 1513 the old Earl of Angus, 'Bell-the-Cat,' retired to the priory, where he died in the following year. In 1532 and 1533 James V. appears from the treasurer's accounts to have made several pilgrimages. So popular, in fact, was the practice of travelling to the shrine of St Ninian in quest of both physical and spiritual good, that, for all that the preachers could preach or Sir David Lindsay could write, it continued for some time after the Reformation, and was not effectually put down till an Act of parliament, passed in 1581, rendered it illegal. The ruinous, roofless cathedral, now overgrown with ivy, and measuring 74 by 24 feet, is in the Romanesque, First Pointed, and Second Pointed styles of architecture, and exhibits some sculptured armorial bearings. It has lost the fine SW steeple, which was standing when Symson wrote in 1680; and the chief vestige of its former magnificence is a beautiful round-headed archway, with remains of vaults and other buildings in connection with the ancient priory. A good specimen of a Runic stone and several other ancient stones are preserved within the old church; and on the road to Isle of Whithorn, $\frac{1}{2}$ mile S of the burgh, stands a greywacke pillar, 3½ feet high, with an encircled cross sculptured off it, and a mutilated inscription, in which only the words, 'of Peter the Apostle,' are now clearly decipherable. It probably marked the site of a pre-Reformation chapel.

The parish of Whithorn is bounded N and NE by Sorbie, E and S by the sea, and SW and W by Glasserton. Its utmost length, from N to S, is 7½ miles; its utmost breadth is 5½ miles; and its area is 12,061½ acres, of which 167½ are foreshore and 3 water. The bold rocky coast, 7 miles in extent, rises rapidly in several places to over 100 feet above sea-level, and is pierced with some deep caves. (See BOROUGH HEAD.) The interior nowhere much exceeds 300 feet of altitude, but has the broken, knolly, tumulated aspect which characterises so much of Wigtonshire—an assemblage of hillocks and little hollows. Wood stretches out to some extent round the mansion of Castlewigg, and elsewhere a few plantations adorn the surface; but they are far from relieving the parish from a comparatively naked aspect. Yet much of the ground, which at a small distance seems barren or moorish, is carpeted with fertile soil, and produces excellent herbage or crops of grain. Excepting the summits and occasionally the sides of a considerable number of the knolls, and excepting the planted area and a small aggregate extent of little bogs, the entire parish is in tillage. Some of the bogs produce turf-fuel, and others contain beds of shell-marl. Copper has been found in some large pieces, and in a small disturbed vein; but competent

opinion is against the likelihood of its existing in such quantity as to repay the cost of regular mining operations. The predominant rocks are transition or Silurian; and large granite boulders lie on some parts of the surface. Much of the soil is a vegetable mould, of great depth and high fertility. St Ninian's Cave, on the coast, about 3 miles SE of the village, contains some old stone crosses that have been arranged for the most part along its walls, the largest one, however, being set up in the centre of the floor, near its inner end. The east wall of the cave contains some very old inscriptions, a number of which are partly unintelligible by being covered with later ones. An ancient fortification, called Carghidoun, and enclosing about half an acre, crowns a precipice on the coast of the estate of Tonderghie; another, called Castle Feather, and enclosing nearly an acre, crowns another precipice some distance to the SE; a third, less traceable, but seemingly about the same size as the second, occurs on a cliff still further SE; and a fourth, whose vestiges lie dispersed over three crowns, surmounts the bold brow of Borough Head. All these look out to the Isle of Man, and probably were erected to defend the country from the descents of the Scandinavian vikings who possessed that island. Remains of a camp existed $\frac{3}{4}$ mile W by S of the town; and, though greatly defaced, are distinct enough to leave no doubt of its having been Roman. Mansions, noticed separately, are CASTLEWIGG and TONDERGHIE. Whithorn is in the presbytery of Wigton and the synod of Galloway; the living is worth £360. Three public schools—Glasserton Road, Isle, and Principal—with respective accommodation for 191, 131, and 177 children, had (1893) an average attendance of 171, 81, and 149, and grants of £160, 14s. 6d., £71, 17s. 6d., and £152, 10s. Pop. (1801) 1904, (1831) 2415, (1861) 2934, (1871) 2906, (1881) 2929, (1891) 2574.—*Ord. Sur.*, shs. 2, 4, 1856-57.

Whithorn, Isle of. See ISLE OF WHITHORN.

Whiting Bay, a bay in the SE of Arran island, Bute-shire, 4 miles SSE of Lamash. It measures 3 miles across the entrance, but less than $\frac{3}{4}$ mile thence to its inner recess; and it has an Established church, a Free church (1875), a hotel, a public school, and a post office, with money order, savings bank, and telegraph departments. A small boat takes passengers to and from the steamers.—*Ord. Sur.*, sh. 13, 1870.

Whitlets, a village in the St Quivox portion of the parish of Ayr, $1\frac{1}{2}$ mile NE of the town of Ayr, under which it has a post office. Pop. (1871) 505, (1881) 588, (1891) 577.

Whitlaid, a ruined peel-tower of the Lauder family in Legerwood parish, Berwickshire, on the left bank of Leader Water, 3 miles SSE of Lauder town.

Whitsome, a post-office hamlet and a parish in the Merse district, SE Berwickshire. The hamlet, which possesses a library and has lately been much improved in appearance by the erection of new and the repairing of other houses, is 3 miles SE of Edrom station on the Berwickshire railway, 6 ESE of Duns, and 4 S of the post-town, Chirnside. In July 1482 it was burnt by the English under the Duke of Gloucester, afterwards Richard III.

The parish, since 1735 comprehending the ancient parish of Hilton, is bounded W and N by Edrom, E by Hutton, SE by Ladykirk, and SW by Swinton. Its utmost length, from E by N to S by W, is $4\frac{1}{2}$ miles; its width varies between $\frac{1}{2}$ mile and $2\frac{1}{2}$ miles; and its area is 4896 $\frac{1}{2}$ acres, of which $\frac{1}{4}$ is water. LEET WATER, rising near the northern border, flows 3 miles south-westward through the interior until it passes off into Swinton parish on its way to the Tweed at Coldstream. Bands of flat ground, at no point sinking much below 150 feet above sea-level, extend along the course of the stream and along the north-eastern and eastern borders; but over the rest of the area they give place to undulations of surface, whose highest ground attains 294 feet. The parish everywhere has the finely enclosed and richly cultivated aspect which so generally distinguishes the Merse. The predominant rock is gray

and white sandstone, which, forming a bed about 40 feet thick immediately beneath the soil, has been largely quarried. Coal was bored for in 1824-25, but without success. The soil of much of the low grounds is a deep alluvium, abounding in vegetable remains. Nearly 200 acres are under wood; and almost all the remainder is in tillage. In the field of Battleknowes on Leetside farm was an ancient camp; many urns, stone coffins, and a bronze caldron have from time to time been discovered in various parts; the memory of the Knights-Templars' possessions at Myreside long survived in the names Temple-lands, Temple Hall, Temple Well; and down to the middle of the 18th century the 'Birrie-Knowe' or primitive mote-hill of the village could be seen to the E of the present schoolhouse. The Rev. Henry Erskine (1824-96), whilst residing at Ravelaw after his ejection from Cornhill, frequently preached at Old Newton (now called East Newton). Among his hearers was the youthful Thomas Boston (1676-1732), author of the *Fourfold State*, who himself once preached in Whitsome church to a multitude so eager that many who could not gain access climbed to the roof and tore away part of the thatch, so as to hear and see him from above. THE LAWS is the only mansion. Whitsome is in the presbytery of Chirnside and the synod of Merse and Teviotdale; the living is worth £368. The present parish church, at the W end of the hamlet, was built in 1803, and contains 245 sittings. The public school, with accommodation for 150 children, had (1893) an average attendance of 93, and a grant of £88, 5s. 6d. Pop. (1801) 560, (1831) 664, (1861) 640, (1871) 608, (1881) 560, (1891) 573.—*Ord. Sur.*, sh. 26, 1864.

Whittader. See WHITADDER.

Whitten Head. See WHITEN HEAD.

Whittingham, a village and a parish of Haddingtonshire. The village stands within $\frac{1}{2}$ mile of the northern border of the parish, 3 miles SSE of East Linton station, 6 E of Haddington, and $7\frac{1}{2}$ WSW of Dunbar, and contains the parish church, the public school, and a post office under Prestonkirk. There is also a horticultural society. The baronial courts of the Earls of March formerly had their seat in Whittingham parish.

The parish, comprehending the ancient chapelry of Whittingham and Penshiel, long subordinate to Dunbar, is bounded N by Prestonkirk, NE and E by Stenton, SE and S by Cranshaws and Longformacus in Berwickshire, W by Garvald, and NW by Morham. Its utmost length, from NNW to SSE, is 11 miles; its breadth varies between $1\frac{1}{2}$ mile and $5\frac{1}{2}$ miles; and its area is 15,466 acres. A portion of the parish, comprising 129 acres, and forming part of Dunbar Common, was transferred by the Boundary Commissioners in 1891 to the parish of Stenton. Whittingham or the Papana Burn, formed by the confluence of two head-streams near Garvald church, runs $4\frac{1}{2}$ miles north-north-eastward on its way to the sea at Belhaven Bay—for 3 miles across the northern interior, and elsewhere along the western and northern boundaries. It winds here through a beautiful sylvan dell, and at the point where it quits the parish is joined by Souchet Water, running $2\frac{1}{2}$ miles north-by-eastward along the eastern boundary. WHITADDER WATER, rising near the middle of the parish at an altitude of 1100 feet, runs $4\frac{1}{2}$ miles south-south-eastward, for $2\frac{1}{2}$ through the southern interior, and then along the boundary with Stenton; and together with Kingside, Kell, Faseny, and other tributary burns, drains all the southern portion of the parish. In the extreme NE the surface declines to 190, in the extreme SE to 700, feet above the sea; and chief elevations, from N to S, are Whitelaw Hill (584 feet), Clints Dod (1307), and Redstone Rig (1382). The northern district is gently undulating, and presents that richness of aspect which so eminently characterises the Haddingtonshire lowlands; the middle district, up to a line a little N of the source of Whittader Water, rises slowly and gradually, with alternating elevations and depressions, and commands from its higher grounds a magnificent view of much of the Lothians, the Firth of Forth, the German Ocean, and the East Neuk of Fife; and the southern

district consists entirely of a portion of the LAMMERMUIR HILLS. Greywacke and red sandstone are the predominant rocks, and the latter has been largely quarried. The soil of the arable lands on the left side of Whittingham Water is generally of superior quality—some of it a deep rich loam, equal to the best in any other parts of the county; that of the arable lands on the right side of the stream is partly a poor clay, partly a good light loam, and mostly light and sandy. About 200 acres are under wood, and little more than one-fifth of the entire area is in tillage, nearly all the remainder being hill-pasture. The massive, square, battlemented keep of Whittingham Castle, where the Earl of Morton and Bothwell are said to have plotted the murder of Darnley beneath a yew tree (probably 600 years old, and now 11 feet in girth), is still in good repair, though showing marks of great antiquity. It stands on elevated ground overlooking Whittingham Water, surrounded by many natural beauties, improved by the embellishments of art. Ruins of the baronial strongholds of Stonepath and Penshiel still exist; and an oval camp, in a state of tolerable preservation, is on Priest Law, one of the Lammerrmuir Hills. It is strongly and regularly fortified, having four ditches on the N side and three on each of the other sides, measuring about 2000 feet in circumference. A pre-Reformation chapel stood below Penshiel Tower, in a glen still called from it Chapelhaugh; and an ancient religious house has left some traces on the estate of Papple. Perhaps the most interesting antiquity is an ancient burying-ground, traceable only as a black mark in a field, where a few years ago 200 stone cists were accidentally turned up. The field is called Kirklands, and probably contained a kirk of the Celtic Church 1000 years ago. Whittingham House, on the right bank of Whittingham Water, $\frac{3}{4}$ miles SSE of East Linton, is a large Grecian edifice of light-coloured sandstone, erected after the purchase of the estate by James Balfour, Esq., in 1817. It has a broad W terrace (1871), three magnificent approaches, fine views, and beautifully wooded grounds, which contain the castle and yew mentioned above. A blue gum from Australia, planted in 1846, is 53 feet high, and $8\frac{1}{2}$ in girth at 1 foot from the ground. The present owner is the Right Hon. Arthur James Balfour, M.P., LL.D. (b. 1848; suc. 1856). His brother, Francis Maitland Balfour (1851-82), was an eminent embryologist. Ruchlav, a mansion of some antiquity, $3\frac{1}{2}$ miles SSW of East Linton, is the seat of Thomas Buchan Sydserff, Esq. (b. 1822; suc. 1839). Whittingham is in the presbytery of Dunbar and the synod of Lothian and Tweeddale; the stipend is £372 with manse. The parish church, at the village, was built in 1722, and as improved in 1822, and again (internally) in 1876, contains 260 sittings. Two public schools—Whittingham and Kingside combination, with respective accommodation for 90 and 24 children, had (1893) an average attendance of 49 and 14, and grants of £59, 13s. and £11, 16s. 3d. Valuation (1835) £8252, 4s., (1893) £6403. Pop. (1801) 668, (1831) 715, (1861) 710, (1871) 657, (1881) 639, (1891) 586. See John Small's *Castles and Mansions of the Lothians* (1893).—*Ord. Surv.*, sh. 83, 1863.

Whitton Tower. See MOREBATTLE.

Wiay, an island ($1\frac{1}{4}$ mile $\times$ 7 furl.; 190 feet high) of Bracadale parish, Isle of Skye, Inverness-shire, in Loch Bracadale.

Wiay, an island ($2\frac{1}{2} \times 1\frac{1}{4}$ mile; 1.6 sq. mile) of South Uist parish, Outer Hebrides, Inverness-shire, off the SE coast of Benbecula. Pop. (1881) 5, (1891) 10.

Wick (Scand. *vík*, 'a bay'), a large coast parish, containing a royal burgh of the same name and also a river, in the NE of the county of Caithness. It is bounded N by the parishes of Bower and Canisbay, E by the outer Moray Firth, S by the parish of Latheron, and W by the parishes of Latheron, Watten, and Bower. The boundary line for $\frac{5}{8}$ miles along the N and W sides at the NW corner is formed by the Kirk Burn and its continuation the Burn of Lyth, and for $\frac{1}{2}$ mile near the centre of the W side by Wick Water; elsewhere

it is artificial, except along the sea coast, and at one or two points where, for short distances, it follows the courses of small burns. The extreme length of the parish, from the point on the N where the boundary reaches the sea $\frac{1}{2}$ mile N of Brough Head, S by W to the point where the boundary again reaches the sea at Bruan, is $15\frac{1}{2}$ miles; the breadth varies from $2\frac{1}{4}$ miles from E to W, across the centre of the Loch of Wester, to $7\frac{3}{8}$ miles measuring straight W from the projecting land S of Staxigoe; and the area is 48,627.696 acres, of which 715.213 are water, 570.189 are foreshore, and 78.073 are tidal water. Following windings the length of the coast-line is about 27 miles, and includes in its northern portion the large sweep of Sinclair or Ackergill Bay, and near the centre Wick Bay, $\frac{1}{2}$ mile wide in a straight line across the mouth, and $\frac{1}{4}$ mile from this line to the town of Wick. Immediately N of Wick Bay is the smaller bay of Broad Haven, and all along the coast from Noss Head—on the SE of Sinclair Bay—southward are a number of narrow creeks with steep rocky sides, and locally known as 'goes.' The northern portion of the coast has a low sloping shore line, while round the greater part of Sinclair Bay there is a low sandy beach; but from the S side of this, round Noss Head and all the way southwards, there is a line of cliffs which are at many places very lofty and picturesque, rising at some points sheer from the sea to a height of over 200 feet. Close inshore, but detached, there are a number of stacks, one of which, called The Brough, $1\frac{1}{2}$ mile S of Wick, is perforated by a long narrow cave which passes right through the mass of rock. Near the centre the roof of the cave has fallen in, so that an oval opening runs from the top to the sea below. A quarter of a mile N of The Brough is the Brig o' Trams—the name given to a narrow natural bridge of rock which connects an outlying stack with the mainland. There is another natural arch called the Needle E'e near Ires Goe, $1\frac{1}{2}$ mile farther S, and near the South Head of Wick on the S side of the bay are several caves. The whole of the rock scenery is good, and on the S side of the South Head there is a heap of stones called the Grey Stones, which illustrate in a noteworthy manner the immense power of the waves on this exposed coast. 'To the S of the town of Wick,' says Sir Archibald Geikie, 'the waves have quarried out masses of Old Red Sandstone, and piled them up in huge heaps on the top of the cliff, sixty or a hundred feet above high-water mark. Some of the blocks of stone, which have been moved from their original position at the base or on the ledges of the cliffs, are of great size. My friend, Mr C. W. Peach, has been so kind as to send me some notes regarding them. "The largest disturbed mass," he says, "contains more than 500 tons, and is known as Charlie's Stone. Others, varying in bulk from 100 to 5 tons or less, lie by hundreds piled up in all positions in high and long ridges, which, before the march of improvement began in the district, extended far into the field above the cliff. Near the old limekiln, South Head, similar large blocks of sandstone have been moved by the gales of the last three years [1862-64]."' The caves already mentioned are generally inhabited by tinkers, an interesting description of whose ways as modern 'cave-dwellers' is given by Dr Arthur Mitchell in *The Past in the Present* (Edinb. 1880). The surface of the parish is gently undulating, and nowhere rises to any great height. In the division to the N of the valley of Wick Water the highest point is Hill of Quintfall (190 feet) in the NW; while S of the river no portion of the surface is less than 90 feet above sea-level; and towards the south-western border are Blingery Hill (340), Tan-nach Hill (457), Hill of Olliclett (462), Hill of Yarehouse or Yarrowes (696)—which is the highest point—White-leen Hill (464), and Hill of Warehouse (513). Along the shore the highest point is Hill of Toftcarl (229 feet). About one-fourth of the parish, mostly near the coast and along the valley of Wick Water in the centre, is cultivated; but the rest of the surface is a bleak bare moorland, with extensive tracts of moss in the N and

W of the northern district and in the centre and SW of the southern district. Across the centre of the northern section is a hollow occupied by Wester Water, Loch of Wester, and—extending along the NW corner—Burn of Lyth; another strath, occupied by the deep and extensive moss of Kilminster, stretches southward along the middle part of the western border; and a third strath, traversed by Wick Water, extends across the centre of the parish. The soil varies from light sand to good loam, but is mostly a stiff hard clay or peaty earth. The underlying rocks are flaggy beds belonging to the Old Red Sandstone, and are quarried for building purposes. Near the centre of the northern division is Loch of Wester ($\frac{3}{4} \times \frac{1}{2}$ mile), $2\frac{1}{2}$ miles SSW is Loch of KILMINSTER, and $1\frac{1}{2}$ mile farther SSW Loch of Winless (1 mile $\times$ 150 yards). In the southern division are Loch of HEMPRIGGS, 2 miles S by W of the town of Wick; Loch of Yarehouse ($\frac{1}{2} \times \frac{1}{2}$ mile; 301 feet), 5 miles S by W of the town; Loch Sarclet ($\frac{1}{2} \times \frac{1}{2}$ mile; 130 feet), 5 miles S of the town; and the small Loch Watanan and Groats Loch, $6\frac{1}{2}$ miles S by W at Ulbster. The drainage is carried off in the N by Burn of Lyth flowing to, and Wester Water flowing from, Loch of Wester—the latter stream reaching the sea near the centre of Sinclair Bay—and by smaller streams flowing to these or direct to the loch; in the centre by Wick Water, in the W and SW of the southern division by the Achairn Burn, and in the NE of it by a burn carrying off the surplus water of Loch of Yarehouse and Loch of Hempriggs, both streams flowing to Wick Water. Loch Sarclet and Loch Watanan both drain direct to the sea. There is good fishing on the lochs and streams, but the trout are small. Wick Water has its principal source in Loch WATTEN (55 feet), and has thence a course of a little over 4 miles E by S to the sea, which it reaches at the head of Wick Bay. Immediately after leaving Loch Watten it receives from the S the stream formed by the joint waters of the Burn of Acharole from Loch of Toftingale and Strath Burn from the southern part of the parish of Watten; and farther down on the same side are the Achairn Burn and a burn from Hempriggs Loch. On the N side the principal tributary is a small stream from Loch of Winless. It is a sluggish stream, and though little over 30 feet in mean breadth it is subject to such heavy floods during rainy weather that it then lays a large part of its strath under water. The fishing is poor and the trout small. The principal antiquities are remains of Pictish towers at several places—a very well preserved one being on the shore of Loch of Yarehouse—and there are also cairns and traces of stone circles and weems. There are a number of ancient burial mounds along the margin of Sinclair Bay. On a headland $1\frac{1}{2}$ mile SSW of the town is the castle of Old Wick, known locally as 'The Auld Man of Wick.' It is a ruined square tower, and is of unknown antiquity; but it must be older than the 14th century, when it was the residence of Sir Reginald de Cheyne, the last of the male line of a once powerful Norman family who held large possessions in the N of Scotland. After his death it passed to the husband of his second daughter, Nicholas, second son of Kenneth, Earl of Sutherland, and was afterwards in the possession of the Oliphants, from whom it passed to Lord Duffus, and so to Dunbar of Hempriggs. Ackergill and Castles Ginnigoe and Sinclair are separately noticed. There were a number of chapels in the district, one at Ulbster being dedicated to St Martin, one at Hauster to St Cuthbert, one at Head of Wick to St Ninian, one at Sibster to St Mary, one at Kirk of Moss to St Duthac; and St Tears, on the S shore of Sinclair Bay, was associated with the Holy Innocents. Curious observances connected with Innocents' Day and Christmas Day are noticed in the *New Statistical Account*. The Moor of Tannach was in 1464 the scene of a clan battle between the Gunns on the one hand and the Keiths of Ackergill and the Mackays of Strathnaver on the other; and Allt-namlach, to the W of the town, was in 1678 the scene of the defeat of the Sinclairs by Lord Glenorchy and a body of Highlanders he had mustered to enforce his

claims to the earldom of Caithness. The parish is traversed for 6 miles by the Georgemas Junction and Wick section of the Highland railway, with stations at Bilbster—9 miles ESE of Georgemas and 5 WNW of Wick—and at the town of Wick. It is also traversed by two main roads to Thurso, by one northward along the coast to Huna and Dunnet, and by one along the coast southward by Lybster to Sutherland; and there are a number of excellent district roads. The industries other than farming are connected with the town of Wick, under which they are noticed. Besides the town of Wick the parish contains also the villages of Broadhaven, Keiss, Newton, Reiss, and Staxigoe. The principal mansions are Ackergill, Bilbster, Hempriggs, Keiss, Reiss, Stirkoke, Thrumster, and Thuster.

Wick is in the presbytery of Caithness and synod of Sutherland and Caithness, and the living is worth £315 a year. The church is noticed in connection with the town. Ecclesiastically the parish is divided into Wick, Pulteneytown, and KEISS, and besides the churches noticed under the town there are Free churches at Keiss and Bruan, and a Baptist church at Keiss. Under the landward School Board Bilbster, Kilminster, Staxigoe, Tannach, Thrumster, West Banks, Whaligoe, and Wick schools, with accommodation for 80, 160, 120, 80, 200, 350, 92, and 146 pupils respectively, had, in 1893, attendances of 31, 77, 54, 38, 72, 291, 42, and 96, and grants of £51, 3s. 6d., £86, 7s. 6d., £53, 14s., £55, 7s., £83, 19s. 8d., £351, 6s., £48, 13s. 11d., and £102, 2s. 6d. Wick unites with Latheron to form the Latheron combination, which has a poorhouse with accommodation for 50, but the number of inmates seldom exceeds 10. The chief proprietor is Garden Duff Dunbar, Esq. of Hempriggs. The land rental increased between the middle of the 18th century and the middle of the 19th century nearly twelve-fold, but during that time large outlays were made by the proprietors for improvements. Pop. (1801) 3986, (1881) 9550, (1861) 12,841, (1871) 13,291, (1881) 12,822, (1891) 13,105, of whom 6170 were males and 6935 females, and of whom 4593 (2203 males and 2390 females) were in the landward portion, while 6513 were in the ecclesiastical parish. Houses in the landward part (1891), inhabited 916, uninhabited 82, and being built 3.—*Ord. Sur.*, shs. 116, 110, 1878-77.

Wick, a royal and parliamentary burgh, seaport, seat of trade, and the county town of Caithness, at the head of Wick Bay, near the middle of the E coast of the parish just described. It is the eastern terminus of the Sutherland and Caithness section (1874) of the Highland railway, and by rail is 161½ miles NNE of Inverness. By road it is 18½ miles S of Huna and John o' Groats' House, and 14½ NNE of Lybster. By sea it is about 50 miles S of Kirkwall, and 110 NNW of Aberdeen. The town may be said to consist of three portions, Wick proper to the N of Wick Water, Louisburgh still farther N, and Pulteneytown to the SE on the S side of Wick Water. The burgh was formerly confined within narrow limits, but in 1883 there were included within the boundary both Louisburgh and the high ground on the opposite side of the river from Wick about the railway station. In the time of the Vikings, from whom it received its name, it seems to have been a resort of some importance, and mention of it occurs in the Sagas as early as 1140, when 'Earl Rognvald went over to Caithness and was entertained at Vik by a man named Harold;' but its modern history may be said to date from 1589, when Wick proper was constituted a royal burgh by charter of James VI. So little idea, however, had the citizens as to their rights and privileges thus obtained, that the burgh practically remained under superiors—first the Earls of Caithness and thereafter the families of Ulbster and Sutherland—like a mere burgh of barony till the Municipal Reform Act of 1833. There are no burgh lands, and the Duke of Sutherland is still feudal superior. Wick itself consists of a narrow crooked street called High Street, running in a general line N and S along the N bank of the river, and with closes and lanes running off on both sides. Louisburgh, which dates from the latter part of

the 18th century, lies to the N and NW. Opening off High Street southward is the well-edified Bridge Street, which crosses the river by a fine stone bridge of three arches erected in 1874. This leads to Pulteneytown, which is divided into Lower Pulteneytown, situated on low ground adjoining the bank of the stream, and Upper Pulteneytown, situated on the high ground overlooking the bay. The greater portion of both lies along streets regularly laid out at right angles. Upper Pulteneytown having in addition a large but somewhat neglected central square. This suburb, which is the seat of all the trade, and contains more than half the whole population, was laid out by the British Fisheries Society in 1808, shortly before they commenced operations at the harbour, and was destined to be a model fishing-town. Wick Town-hall, in Bridge Street, has a sandstone front and a cupola-shaped belfry, with a public clock, over the doorway. The County Buildings, erected in 1866 at a cost of £6000, are also in Bridge Street, and contain a good court-room with retiring rooms and accommodation for the various county offices. Both the Town-hall and the County Buildings were altered and enlarged in 1894. The prison, behind the town-house, has been disused since 1882. The parish church, at the W end of the town, was erected in 1830 at a cost of £5000, and is a poor Gothic building with a spire. It contains 1900 sittings. The pre-Reformation parish church, dedicated to St Fergus, is supposed to have stood at Mount Halie, near the E end of the town, but a more recent structure—the predecessor of that removed to make way for the present building—occupied a site close to the existing church. The only traces of it now remaining are the structures called the Sinclair Aisle and the Dunbar Tomb. At Pulteneytown there is a *quoad sacra* church erected in 1842, and containing 550 sittings. The Free church in Bridge Street is a good building, erected in 1862. Of two Free churches in Pulteneytown the one dates from the Disruption, and had a spire added in 1872. The other—Reformed Presbyterian till 1876—was built in 1839, and contains 380 sittings. The United Presbyterian church, in Pulteneytown, built in 1878-79 at a cost of £4000, and containing 700 sittings, replaced an older church erected in 1815. The original Congregational church, in Wick, built in 1799, was replaced by the present building on a different site in 1882. It contains 500 sittings. The Evangelical Union church, with 520 sittings, was erected in 1845. St John's Episcopal church, in Pulteneytown, a building of 1870, Early Decorated in style, has 120 sittings; and there are also a small Baptist church (1809), with 150 sittings, and St Joachim's Roman Catholic church in Pulteneytown, erected in 1837, and containing 250 sittings. The Temperance Hall, erected in 1842, has accommodation for about 1200 persons. Two of the bank offices are very good buildings, and there is a fine hotel close to the bridge erected at the time of the opening of the railway. Besides the stone bridge at Bridge Street, there is a wooden bridge farther down the river near the harbour. The old burying ground was round the church, but owing to its crowded condition, a new cemetery was formed in 1872 to the S of Pulteneytown. Under the burgh School Board the Pulteneytown Academy, North Wick and South Wick schools, with accommodation for 489, 394, and 423 pupils respectively, had, in 1893, attendances of 482, 305, and 270, and grants of £495, 19s. 6d., £313, 7s. 6d., and £264, 6s. 6d.

The jurisdiction of the port of Wick extends from Bonar-Bridge round all the E, N, and W coast as far as Rhu Stoor on the W coast of Sutherland, and takes in also the island of Stroma in the Pentland Firth. It thus includes the harbours of Little Ferry, Helmsdale, Lybster, Broadhaven, Scrabster, and Portskerry, besides numerous creeks. Except as regards fishing-boats, the shipping trade is mostly confined to Wick. In 1850 the number of vessels belonging to the port was 54, with an aggregate tonnage of 8445; in 1875 there were 65 sailing vessels with an aggregate tonnage of 6412, and 1 steam vessel with a tonnage of 108; in 1884 there were

56 sailing vessels, with an aggregate tonnage of 5085; and in 1894 there were 26 sailing vessels with an aggregate tonnage of 1773, and 3 steam vessels of an aggregate tonnage of 281. The following table shows the tonnage of vessels that entered from and to foreign and colonial ports and coastwise with cargoes and ballast, in various years:—

Year.	ENTERED.			CLEARED.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1860	108,706	4,770	108,476	98,547	8,648	107,195
1874	92,840	5,310	98,150	82,781	4,778	87,559
1888	108,714	13,651	122,365	87,195	13,496	100,560
1893	100,633	10,288	110,921	100,733	10,185	110,918

The exports are chiefly fish, but grain, cattle, and county produce generally are also sent away. The imports are principally coal, wood, and goods suited for a general country trade. There is regular steam communication with Aberdeen and Leith twice a week in summer and once in winter, and with Kirkwall and Lerwick once a week in summer.

The commerce of early times seems to have found accommodation in the mouth of the river, and at small jetties on the N side; and no attempt to form a regular harbour was made till 1810, when the first one was constructed, partly from Government funds and partly with money furnished by the British Fisheries Society, originally founded in 1786 for the purpose of developing the fisheries round the British coasts. The works then executed cost £14,000; but as they proved inadequate for their purpose, improvements were carried out between 1825 and 1831 at a cost of £40,000, and the works brought into the state in which they remained down to 1882. From the increased size of vessels and boats employed in connection with the fishing, this new harbour was, within a few years again found too small, and in 1844 the Fisheries Society obtained an Act of Parliament empowering them to enlarge it. Nothing was, however, done, and in consequence of the insufficient nature of the accommodation, and the harbour's being a tidal one, and having its mouth so placed to shelter it from the sea that boats entering it had to broach broadside to the sea before running in, great loss of life occurred in 1845, and again in 1848. In 1857 a fresh Act was obtained, but as the scheme proposed under it required the sanction of the Admiralty, and that body wished for the formation of a harbour of refuge which the Society could not afford to carry out, nothing was done till 1862, when it was agreed that a modified harbour of refuge should be formed. This was to be accomplished by the construction of a breakwater running out from the S shore of the bay 430 yards to the SE of the old works, and extending 1450 feet outward at right angles to the shore, terminating in 30 feet of water, and sheltering an area of about 25 acres, of which more than 20 had a depth of over 2 fathoms at low water. The force of the waves in the bay seems, however, to have been underestimated, if, indeed, the principle of construction was not wholly wrong; and year after year portions of the great pier were thrown down. At last, after the Society had expended £62,000 of a Government loan, £54,000 of their own funds, and £40,000 of surplus harbour rates, in terrific gales during the years 1871 and 1872—when the force of the waves was such as to break iron bars measuring 8 by 3 inches—the whole structure was completely ruined, except a fragment of the shore end, and operations were abandoned in 1874, from which time till 1880 the storms of each winter swept away portion after portion of what remained. In 1879 a fresh Act was obtained by the Fisheries Society, empowering them to hand over the whole works to a body of trustees elected by public bodies in the town, while all sums against the harbour for repayment of the sums expended on it by the Society were abandoned. The old works were injured by the storms of 1880; and the trustees obtained from the Treasury, first a remission of interest, and ultimately in

1832 a suspension of the present repayment of the £60,000 due to the Public Works Loan Commissioners; and under a provisional order obtained in 1833, a new harbour was constructed at an estimated cost of £90,000. Both harbours have since been deepened, so that fishing boats may enter at all states of the tide. On account of the frequently recurring shipping disasters which take place along the coast, a deep-sea harbour is still much needed. Two lighthouses, one on the north pier-end, the other on the shore, have red and green fixed lights respectively.

The great industries of Wick are fishing, particularly herring fishing, and fish-curing. Prior to 1768 the only herring caught were by hand lines for bait; but then, under the encouragement of a parliamentary bounty, boats were fitted out for systematic prosecution of the trade. In that year, probably from inexperience, operations failed, but in 1782, 363 barrels were caught, and in 1790, 13,000 barrels; and ever since the formation of the harbour it has been frequented by large numbers of boats from all quarters. During the season, in July and August, this gives the place a somewhat 'ancient and fish-like smell,' and herring and herring barrels are everywhere to be found along the shore, sometimes occupying considerable spaces along the sides of the streets in the portion of the town nearest the harbour. The fishermen come from all parts of Scotland, the greater number being 'hired men' from the Western Highlands and Islands. The scene of some 600 boats setting sail every evening for the fishing grounds is witnessed by spectators from all parts of the country. The fishery district of Wick extends from Whale Goe or Whaligoe, 7 miles N by W of the town of Wick, round the rest of the Moray Firth and N and W coasts as far as Cape Wrath. It embraces the fishing towns and villages of Whaligoe, Sarclet, Wick, Boathaven to Elzie, Staxigoe, Ackerhill, Keiss, Nybster and Auckingill, Freewick, Duncansbay, Stroma, Huna, Gills, Mey, Scarfiskerry, Ham, Brough, Dunnet, Castlehill and Murkle, Thurso and Scabster, Crosskirk and Brims, Sandside, Portkerry, Strathyhead, Armadale, Kirtomoy, Farr, Roan, Coldiback, Scullomy, Talmine, Erriboll, and Smoo. About a third of the boats and men employed, and about two-thirds of the first-class boats, belong to Wick itself and the neighbouring places. Belonging to the district there were, in 1893, 287 first-class, 59 second-class, and 358 third-class boats, employing 2310 fishermen and boys and 2974 other persons. The boats were valued at £31,437, the nets at £33,140, and the lines at £3303. The number of boats fishing within the district, most of them from Wick harbour and the neighbouring Broadhaven, in 1821 was 595, and from that time it gradually increased till 1831 when it was 1021, fell off again in 1838 to 566, increased in 1857 to 1100 and in 1862 to 1122, and has since then, owing to the insufficient harbour accommodation, fallen off very largely. The number in 1893 was 318, and the total catch 83,227 crans. There were employed in connection with these boats 2220 fishermen and boys, and 1772 other persons, and the total number of barrels cured was 94,616, of which 53,366 were exported to the Continent. A bank within ten miles of Wick, and other banks beyond, afford excellent white fishing, the town being in winter and spring one of the great centres of this industry. The number of cod, ling, and hake cured in 1893 was 69,828; and over £38,900 worth of other fish, including crabs and lobsters, were captured. Minor industries are the manufacture of ropes, sails, and herring nets; and there are cooperages, woollen manufactories, saw-mills, boatbuilding yards, and a distillery.

The burgh is governed by a provost, 3 bailies, a dean of guild, a treasurer, and 9 councillors, who are also police commissioners, but the police force is united with that of the county. The British Fisheries Society were superiors of Pulteneytown until 1892, when the estate, together with the society's rights to the pier of Tobermory, was purchased by John Usher, Esq., of Norton, Midlothian, for £20,000. Its annual value,

derived from feu-duties and the rents of a few small farms, is about £1470. There are, however, 12 improvement commissioners who exercise local power, and who also, under the Public Health Act, form the Local Authority. Gas is supplied by a private company constituted in 1846. Pulteneytown is supplied with water from Loch Hempriggs, and a supply was introduced into the other districts in 1882 from Loch of Yarehouse at a cost of £6000.

The Pulteneytown water supply having become insufficient, towards the end of 1894 it was proposed to introduce an extra supply also from the Loch of Yarehouse. The town has a post office, with money order, savings bank, insurance, and telegraph departments, branch offices of the Bank of Scotland, British Linen Company, Commercial Union, North of Scotland, and Town and County Banks. There is also a branch of the National Security Savings Bank, besides several hotels. The newspapers are the *Unionist John o' Groat Journal* (1836), the *Independent Northern Ensign* (1850), and the *Liberal Northern News* (1888), all published on Tuesday. Among the miscellaneous institutions may be noticed a customhouse, a coastguard station and Naval Reserve battery, with buildings erected in 1876 on the South Head, beyond Pulteneytown, a Freemasons' hall, two lifeboat houses, a fire brigade, a free public library, the Rhind Institution, a chamber of commerce, artillery and rifle volunteers, a branch of the Shipwrecked Fishermen and Mariners' Society, and the usual benevolent and philanthropic associations. The Free Libraries Act was adopted in 1887, and in 1895 a site for new library buildings was presented by Mr Usher. Sheriff ordinary and commissary courts for the county are held every Tuesday and Friday during session, and small debt courts for the parishes of Wick, Watten, Bower, and Canisbay every Tuesday during session. Down till 1828 these courts were held at Thurso. (See THURSO.) Quarter sessions are held at both Wick and Thurso, and justice of peace small debt courts on the first and third Mondays of each month. There is a weekly market on Friday, and there are fairs on the fourth Tuesday of November. There is a coach to Lyth, Castletown, and Thurso, one to Mey, and another to Lybster and Dunbeath every day.

The parliamentary burgh, which includes Pulteneytown, Louisburgh, Broadhaven, and a small district round, as well as Wick proper, unites with Dingwall, Tain, Cromarty, Dornoch, and Kirkwall in returning a member to parliament. Parliamentary constituency (1893) 889; municipal 456. Valuation, royal burgh, (1885) £5585, (1893) £9316, including £436 for the railway; parliamentary burgh (1885) £24,218, (1893) £26,619. Pop. of royal burgh, 2962; inhabited houses, 556. Pop. of parliamentary burgh (1841) 5522, (1861) 7475, (1871) 8131, (1881) 8053, (1891) 8464, of whom 3919 were males and 4545 were females. Houses (1891) inhabited 1380, uninhabited 47, and being built 5. Of the whole population 5550 were in Pulteneytown, 1935 in Wick proper, and 1027 in Louisburgh; and of the inhabited houses 824 were in Pulteneytown, 319 in Wick proper, and 237 in Louisburgh.—*Ord. Sur.*, sh. 116, 1878.

Wigtown or Wigton, a town and a parish on the E border of Wigtownshire, and on the W shore of Wigtown Bay. The name is derived either from *wic*, 'a village,' and *ton*, 'a hill;' or from *wic*, 'a bay,' and *ton*, 'a town'—derivations which are both supported by the actual position of the town. The form 'Wigtown' is generally used, so as to distinguish the Scottish burgh from the Cumberland town of 'Wigton.'

The town is a royal burgh, a seaport and seat of trade, and ranks as the county town of Wigtownshire. It is



Seal of Wick.

situated on a tabular hill of about 200 acres in area, rising to a height of over 100 feet above sea-level, and commanding an extensive view. It has a station on the Wigtownshire railway, and stands about 3 furlongs NNW of the mouth of the Bladenoch, 7½ miles S by E of Newton-Stewart, 11 N of Whithorn, 26 E of Stranraer, and by road 129 SSW of Edinburgh. As seen from a distance the town presents a very picturesque appearance; and its neatness, cleanliness, and general air of comfort and good taste favourably impress those who enter it. The houses are built in a great diversity of styles, which lends an air of quaint variety to the principal streets; while some of the more recent edifices attain a very considerable degree of elegance. The principal locality in the town is the central rectangle, about 250 yards long, and covering fully an acre of ground. The centre of this space is occupied by a public bowling-green, surrounded by gravelled walks, shaded by trees and shrubs, the whole being divided by a railing from the roadway, which runs all round. The site of this public square, which adds very much to the beauty of the town, was in the old days used as a common dunghill; and it is one of the stories of the town that on one occasion during an election a public banquet was given on a temporary platform of boards hastily erected on this unsavoury site. The other main thoroughfares of the town are more or less directly connected with this central square. Within its bounds stand the old and new burgh cross. The former consists of a column 10 feet high, and 18 inches in diameter, resting on a square base, and crowned by a square stone on which dials are sculptured. The new cross was erected to commemorate the battle of Waterloo, although it bears the date 1816, the year after that event. It is an elegantly sculptured stone monument, on an octagonal base, and is about 20 feet high. It is surrounded by a railing. The town-hall stands at the lower extremity of the square, on the site of an older building of the same nature, erected about 1756. The present fine Tudor edifice was built in 1862-63, and has a lofty tower. It contains a court-room and the various county offices, besides a large assembly-room. On the two sides of the entrance are carved the burgh arms of Stranraer and Whithorn; and above the arched windows, the initial letters of the names of the principal places in the county. The tower, which belonged to the old town-hall, has lost all architectural interest by being faced by new stonework, but the cell in it in which the Wigtown Martyrs were confined has been preserved. The burgh arms of Wigtown appear on the tower, near a slab bearing the royal arms, which was taken from the former court-house, and is now placed over the side-entrance. A bell, weighing over 7 cwt., was presented by Provost Murray in 1881, in place of one dated 1633. The prison for the Lower District of the county was legalised in 1848, but was closed in 1878. Other noteworthy buildings, besides the churches, are the board school and the bank offices.

The ancient church of Wigtown stood on a retired spot about 100 yards from the E end of the town, and was dedicated to St Machute, who died in 554. Given by Edward Bruce, brother of King Robert, to the monks of Whithorn, it became afterwards a free rectory under the patronage of the crown; though about 1650 the patronage was acquired by the Earl of Galloway. The original church was rebuilt in 1730, repaired in 1770, and re-roofed in 1831, but is now in a state of ruin. The present parochial church, erected in 1853, adjoins the ruin. It is an ornamental structure with a handsome spire, and contains 660 sittings. The Free church is in the Quay Road, in the SW of the town, and contains 400 sittings. The U.P. church, built in 1845, with 700 sittings, is an unpretentious building near the townhead. The only other church in Wigtown is the Roman Catholic church of the Sacred Heart, built in 1879 to hold 250. It has a school connected with it with an average of 26 pupils. The burgh and parochial board school had in 1893 an accommodation, average attendance, and government grant of 276, 231, and £251, 2s.

The cemetery surrounds the parochial church, and contains the tombstones of the Martyrs of Wigtown, whose fate is described below. That of Margaret Wilson is a horizontal slab supported by four short pillars, and bears the following inscription in addition to her name:—

'Let earth and stone still witness beare,
Their lvs a virgin martyr here,
Murder'd for owning Christ supreme
Head of His Church, and no more crime,
But not abjuring Presbrytery,
And her not cuning Frelacy.
They her condemn'd by unjust law
Of Heaven nor Hell they stood no aw;
Within the sea ty'd to a stake,
She suffered for Christ Jesus sake.
The actors of this cruel crime
Was Lagg, Strachan, Winram, and Grahame.
Neither young years nor yet old age
Could stop the fury of there rage.'

A small upright stone commemorates her fellow sufferer, Margaret MacLachlan; and a plain upright slab records that

'Here lyse William Johnston
John Milroy George Walker who was with
out sentence of law hang'd by Major
Winram for their adherence to Scot
lands Reformation covenants nation
al and solam leagwe
1685.'

Wigtown has a post office with money order, savings bank, and telegraph departments, branches of the British Linen, Clydesdale, and National Banks. The chief hotels are the Galloway Arms and the Commercial Inn. Among the other institutions are a mechanics' institute, the Wigtown agricultural society, a gas company, and various religious and benevolent associations. A cattle market is held on the fourth Friday of every month, except November, when it is held on Thursday before Dumfries.

The old harbour of Wigtown was a creek at the mouth of the Bladenoch, but became blocked about 1818 in consequence of a change in the river's current. The new harbour, about a ¼ mile S of the town, was formed at a considerable cost by the corporation; and has quays and a breast-work. Ships of 300 tons burden can approach the quay. The little trade that is carried on consists in the export of agricultural produce and the import of coal, lime, and manures. The tonnage belonging to the port in the annual average of 1845-49 was 3892; in 1856, 2080 in 54 vessels; in 1875, 1931 in 40 vessels; in 1884, 1466 in 35 vessels; and in 1893, 970 tons in 21 vessels, none of them steamers. There entered in 1893 vessels of an aggregate tonnage of 22,767; and cleared vessels of an aggregate tonnage of 22,607. Wigtown is the seat of a custom-house which comprehends in its district the creeks of Wigtownshire and Kirkcudbright, from the Mull of Galloway to the mouth of the river Fleet.

Wigtown, described on its seal as an 'antiquissimum burghum,' has been asserted to have been a royal burgh from the reign of David II.; but the original grants having been lost or destroyed, James II. granted a new charter in 1457, which was confirmed by the Scottish parliament in 1661. In 1662 Charles II. confirmed and extended the burghal rights in a new charter. The burgh is governed by a provost, 2 bailies, a treasurer, and 15 councillors. The municipal revenue in 1893-94 was £248.

Landed property of the burgh at one time extended to 1200 acres, but has been much diminished by alienation; it is, however, still considerable, and includes the farms of Maidland and Kirklandhill. The municipal



Seal of Wigtown.

constituency in 1893 was 302, of whom 80 were females. Wigtown formerly united with Whithorn, Stranraer, and New Galloway in sending a member to parliament, but under the Redistribution Bill of 1885 its representation was merged in the county. Sheriff, ordinary, and commissary courts, and a sheriff small debt court are held every Tuesday during session; a justice of peace court is held on the first Friday of every month; and quarter sessions on the first Tuesday of March, May, and August, and the last Tuesday of October. Valuation (1885) £5578, (1893) £7209, plus £80 for railway. Pop. of royal burgh (1881) 1789, (1891) 1509, of whom 847 were females. Houses (1891) inhabited 369, vacant 45.

History and Antiquities.—A grassy mound between the town and the harbour marks the site of Wigtown Castle, which stood on the banks of the former course of the Bladenoch. Although the outline of the structure was traced in 1830, the materials had long previously been removed for building purposes. Whether or not it was originally founded by early Saxon invaders, it appears to have existed in the time of Edward I. of England, for whom it was held by Walter de Currie in 1291, and by Richard Siward in 1292. Sir William Wallace is said to have captured it in 1297, and to have entrusted it to Adam Gordon. Subsequently it was delivered to John Baliol, as King of Scotland, and served for a time as a royal residence. Its place in history is insignificant, and its progress through gradual decay to eventual destruction has not been traced. A Dominican priory was founded near the castle in 1267 by Devorgille, mother of John Baliol, and though never very important, received privileges from various kings. Alexander III. granted to the monks a large share of the rents of the town of Wigtown, and they also held royal grants of fisheries on both sides of the river. James IV. used to lodge within its walls on occasion of his frequent pilgrimages to St Ninian's shrine at Whithorn, and repaid its hospitality by various gifts and grants. The priory was surrounded by an extensive cemetery; but it never attained much eminence, and passed into ruin before 1684. Though a portion of its walls was to be seen in 1818, they cannot now be traced. Wigtown gave the title of Earl from 1606 till 1747 to the family of Fleming. See BIGGAR.

The most striking incident in the history of the burgh is the execution of the 'Drowned Women of Wigtown,' whose graves are mentioned above. Margaret Wilson, a girl of eighteen years, and Margaret MacLachlan, aged sixty-three, together with Agnes Wilson, a younger sister of the first-named, arrested on a charge of non-conformity to Episcopal Church-government, rebellion, and presence at field conventicles, were brought before the judges whose names appear in the epitaph already quoted. All three refused the Abjuration Oath when it was put to them, and all were brought in guilty. The sentence was at once pronounced, that the three should be tied to stakes fixed within the flood-mark in the Water of Bladenoch, where the sea flowed at high water, so that they should be drowned by the incoming tide. Agnes Wilson was got out by her father (who had conformed) upon a bond of £100, which was duly exacted on her non-appearance, but on the other two the sentence was carried out 11 May 1685. 'The two women,' writes Wodrow, 'were brought from Wigtown, with a numerous crowd of spectators, to so extraordinary an execution. Major Windram, with some soldiers, guarded them to the place of execution. The old woman's stake was a good way in beyond the other, and she was the first despatched, in order to terrify the other to a compliance with such oaths and conditions as they required. But in vain, for she adhered to her principles with an unshaken steadfastness.' After the water had covered Margaret Wilson, but before she was quite dead, she was pulled up; and when she had recovered, another chance of taking the Abjuration Oath was given to her. 'Most deliberately,' continues the account, 'she refused, and said, "I will not; I am one of Christ's children; let me go!" Upon which she was thrust down again into the

water, where she finished her course with joy.' Efforts have been made to prove that the sentence was never really executed, but that a recommendation to pardon, made by the Lords of the Privy Council, which appears in the Council registers, was carried into effect. Abundant evidence has, however, been brought to prove the fatal issue of events—probably before the notice of remission had time to be conveyed from Edinburgh to Wigtown. The Bladenoch has altered its course since that tragic event, but its former channel is still to be traced, a little to the N of its present course. On Windy Hill, which is the highest point of the eminence on which the town stands, a monumental obelisk has been raised, at a cost of £200, to the memory of the martyrs. See Mark Napier's *Case for the Crown* (1868), and the Rev. Dr Arch. Stewart's *History Vindicated* (2d ed. 1869).

The parish of Wigtown is bounded on the NW, N, and NE by Penninghame, S and SW by Kirkcinner, and SE by Wigtown Bay. Its greatest length, from E to W, is $4\frac{1}{2}$ miles; its greatest breadth is nearly 4 miles; and its area is 9633 acres, of which 1793 $\frac{1}{2}$ are foreshore and 84 $\frac{1}{2}$ water. The northern boundary is traced for $3\frac{1}{2}$ miles by the exceedingly zigzag course of the Bishop Burn, and the Bladenoch winds $6\frac{1}{2}$ miles east-by-southward along all the Kirkcinner boundary. The E frontier of the parish is fringed by a broad expanse of flat sand and salt marsh, $2\frac{1}{2}$ miles long by 2 broad, covered by the sea at high tide, but dry at low water, across which the streams force their way, to fall into the estuary of the Cree. The surface of the parish in no place much exceeds 200 feet above sea-level. Wood Fell, in the NE, attains that height, together with several points close by, as does also a height in the W at Balmeig on Torhouse Moor. The S district is tumulated and hilly, but nowhere attains a much higher level than 100 feet. A district to the NE, about $2\frac{1}{2}$ miles by $1\frac{1}{2}$ mile in extent, and forming the S extremity of the Mosses of Cree, which stretch into Penninghame, is an almost uninterrupted level, bearing evidence of having been at successive epochs covered by the sea, by forest, and by bogs. Though much of it has been reclaimed for the plough, Barrow or Burgh Moss and Carsegown Moss still cover a considerable part of its surface. The centre and SW of the parish are occupied partly by Claughrie and Torhouse Moors. The soil of the parish is chiefly a dry light hazel mould, lying on till or gravel. The prevailing rocks are greywacke or greywacke slate. Besides the streams on the boundaries, the only other is the Barrowmoss Burn, which flows from the skirts of Wood Fell E through the centre of the parish to the estuary of the Cree.

Besides the royal burgh of Wigtown, the parish contains the village of Bladenoch. The S is traversed by the high road to Portpatrick, and the E by two roads to Newton-Stewart. The Wigtownshire railway runs from N to S through the E of the parish for about 4 miles. The chief mansion in the parish is Torhouse. The chief industry is agriculture. There are some small manufactures in Wigtown, and there is a distillery at Bladenoch.

The parish is the seat of a presbytery in the synod of Galloway; the living is worth £375. The parochial church and the school have already been noted above. The Free Church also has a presbytery of Wigtown, Pop. (1755) 1032, (1801) 1475, (1831) 2337, (1861) 2637, (1871) 2306, (1881) 2198, (1891) 1911, of whom only 402 were landward.

The chief antiquities are the Standing Stones of Torhouse, and Torhousekie Fort or Cairn. The former are of unpolished granite, from 2 to 5 feet long, from 4 to 9 in girth, and from 5 to 12 asunder. They form a circle of 218 feet, and number 19 on the circumference and 3 in the centre. Some antiquaries regard them as Druidical remains; others, among whom are Sibbald, Timothy Pont, and Symson, prefer to regard them as monuments to the Scottish King Galdus, who conquered the province from the Romans. Torhousekie Fort is situated on a rising-ground in the W, and shows remains of two circular stone walls. There is a well dedicated.

to St Ninian near the intersection of Barrowmoss Burn and the Newton-Stewart road.—*Ord. Sur.*, sh. 4, 1857.

Wigtownshire, a maritime county in the SW extremity of Scotland, forms the W division of Galloway, and contains the most southerly land in Scotland. It is bounded on the N partly by the mouth of the Firth of Clyde, but chiefly by Ayrshire, E by Kirkcudbrightshire, S by the Irish Sea, and W by the Irish Channel. It lies between $54^{\circ} 36' 45''$ and $55^{\circ} 3' 40''$ N lat., and between $4^{\circ} 15' 50''$ and $5^{\circ} 7' 10''$ W long. Wigtownshire was one of the three counties (the others being Kirkcudbrightshire and Orkney) on whose county and parish boundaries no alteration was deemed necessary by the Commissioners appointed under the Local Government (Scotland) Act of 1889. The boundary, beginning at Galloway Burn on the E bank and near the entrance of Loch Ryan, passes tolerably due E in an irregular line along the courses of the Main Water and Cross Water of Luce and other smaller streams, past Lochs Maberry and Dornal, till it strikes the river Cree at Carrickburnfoot, whose course it follows at first eastwards and then southwards, so that the entire boundary with Kirkcudbrightshire is formed by the river Cree and its estuary Wigtown Bay. The S boundary, from Burrow Head, follows the huge curve of Luce Bay, which, opening with a width of $18\frac{1}{2}$ miles, strikes inland for $16\frac{1}{2}$ miles to within $6\frac{1}{2}$ of the head of Loch Ryan, and covers an area of 160 square miles. From the Mull of Galloway, forming the western horn of Luce Bay, the coast runs N to Corsewall Point, where it bends to the W for a short distance to Milleur Point, on the W of the entrance to Loch Ryan. Thence it follows the long narrow indentation of Loch Ryan, which stretches 10 miles S by E into the interior, until the point whence we began to trace the boundary is reached. But for the indentations of Luce Bay and Loch Ryan the outline of the county would be approximately a square of about 29 miles on each side. The land between these two inlets forms an isthmus about $6\frac{1}{2}$ miles broad, that connects with a long narrow peninsula tapering to a point in the S at the Mull of Galloway. The greatest length of the county, from E to W, is about 30 $\frac{1}{2}$ miles; its greatest breadth, from N to S, is 28 $\frac{1}{2}$ miles; and its land area is 485 $\frac{1}{2}$ square miles or 310,747 acres. Wigtownshire is the seventeenth among Scottish counties in point of size, and the twenty-second in point of population.

The coast, inclusive of the great and small inlets, has an extent of about 120 miles, for the most part bold and rocky, and in very many places pierced with caverns. There are but few recesses in which a large ship could safely ride at anchor or attempt to land a cargo, and not very many that afford fair landing-places for even small boats. Loch RYAN, indeed, may be regarded as one fine harbour, and two or three of the creeks of Wigtown Bay are decidedly hospitable; but most of Luce Bay, and the great majority of the small bays and other openings, are flanked or beset with rocky and fissured cliffs, often rising sheer from the water. The head of Luce Bay is, however, bounded by a stretch of sandy beach. The small bays are exceedingly numerous, and with the small headlands form a slightly waving or serrated coast-line. The chief headlands are Burrow Head, at the dividing point between Wigtown Bay and Luce Bay; the Mull of Galloway, the most southerly land in Scotland, at the dividing point between Luce Bay and the Irish Channel; and Corsewall Point in the extreme NW of the county at the meeting of the Irish Channel and the Firth of Clyde. The most important harbours are STRANRAER at the head and Cairnryan on the E side of Loch Ryan; Carly on the river Cree, $2\frac{1}{2}$ miles SSE of Newton-Stewart; Wigtown, on the upper part of Wigtown Bay; Garlieston, near the middle of the W side of Wigtown Bay; Isle of Whithorn, 2 miles NNE of Burrow Head; Port-William, near the middle of the E side of Luce Bay; Port-Logan, on the Irish Channel, $7\frac{1}{2}$ miles NNW of the Mull of Galloway; and Portpatrick, on the Irish Channel, $10\frac{1}{2}$ miles NNW of Port-Logan.

The interior is divided into three great districts. The peninsula, or rather double peninsula, W of Loch Ryan and Luce Bay, is known as the Rhinns of Galloway; the district which forms the broad-based triangular peninsula between Luce Bay and Wigtown Bay is called the Machers; while the rest of the county, N of the Machers and E of Loch Ryan, bears the loose general name of the Moors. The physical aspect of Wigtownshire is not strikingly varied, and presents few imposing landscapes. The surface, though partly low and level, offers in most parts the appearance of a continuous sea of knolls, and hills, and hillocks; but probably it aggregately rises less above sea-level than any other equally large district in Scotland. A considerable area of low level ground, bearing marks of having at a comparatively recent period been submerged by the sea, lies along the lower reach of the river Cree and the upper part of Wigtown Bay; and the isthmus between the head of Loch Ryan and Luce Bay bears similar traces. The heights, as the county recedes northwards, become bolder and of a more decidedly hilly character than near the coast; and along the Ayrshire border the loftiest average is reached on the skirts of the broad range of the southern highlands, which extends across Scotland to the coast of Berwickshire. Heathy hills, high mosses, and bleak fells thus occupy a large portion of the Moors. The Rhinns district is traversed from N to S by a watershed, which sends its drainage off on both sides. The Machers has mostly, like the Moors, a southern exposure, and both these districts send their waters chiefly to Wigtown and Luce Bays.

The chief heights in the Rhinns are, from N to S, Tor of Craigoch (409 feet), in Kirkcolm parish; Craighad of Lochnaw (484) and several points of 500 feet, in Leswalt; Broad Moor (500), a summit near Craigenlee (592), and Cairn Pat or Piat (593), the highest point of the Rhinns, in Portpatrick; Barmore Hill (463), in Stoneykirk; Barneorkrie Moor (507), West Muntloch (525), and Dunman (522), in Kirkmaiden. The Mull of Galloway rises 223 feet above sea-level. In the Moors the chief heights are Cairnarzean Fell (735 feet), Cairn-scarrow (761), Braid Fell (769), Brockloch Fell (769), and Mid Moile (844), in Inch parish; Bucht Fell (607), Balmurrie Fell (807), Quarter Fell (834), Stab Hill (725), Murdonoches (900), and Miltonish (970), in New Luce; Knock Fell (518), and Craig Fell (538), in Old Luce; Barskeoch Fell (579), Culvenann Fell (702), Eldrig Fell (742), Urrall Fell (604), and Craigairie Fell (1000), in Kirkcowan; Glaschoch Fell (493) and an unnamed point near Loch Ochiltree (604), in Penninghame. In the Machers the chief heights are Craigeach Fell (426 feet), the Doon of May (457), Mochrum Fell (646), Bennan Hill (500), and East Bar (450), in Mochrum parish; Carleton Fell (475) and the Fell of Barhullion (450), in Glasserton.

The streams of Wigtownshire are very numerous, but for the most part of short course and unimportant size. The chief is the Cree, which for $21\frac{1}{2}$ miles forms the boundary between Kirkcudbright and Wigtown shires, just before it enters Wigtown Bay at Creetown. It is navigable up to Carly, but receives no noteworthy tributary from Wigtownshire. The Bladenoch, issuing from Loch Maberry on the Ayrshire border, has a course of about 23 miles S, SE, and E to Wigtown Bay. It receives the Tarf Water, the Black Burn, and the Malzie Water on the right. The Luce Water is formed by the junction, at New Luce village, of the Main Water of Luce and the Cross Water of Luce. Its entire course within the county is about 15 miles. All these rivers contain salmon and trout. There are numerous other smaller streams that are frequented by anglers for the sake of trout-fishing. Among these may be mentioned the Black Burn, Bishop Burn, Comrie, Colinty, Cragoch, Cruise, Donnan, Glenburn, Kirkklachie, Langabeastie, Moneypool, Penwhirn, Piltanton, Polnure, Pullaryon, and Sole Burns. The lakes are also numerous but small. In the Rhinns are Loch Connal in Kirkcolm parish and Souleseat, and Castle-Kennedy in Inch. In the Moors are Lochs Maberry and Dornal on

the Ayrshire boundary; Loch Ochiltree, and Loch Cree on the Cree, in Penninghame; and Loch Ronald in Kirkcowan. In the Machers are Castle Loch, the four lochs of Mochrum, Eldrig Loch, and White Loch, in Mochrum. Other small lochs in various parts of the county are Lochs Derry, Heron, Barwhapple, Dernaglar, Clugston, Whitefield, and Black Loch. Dowalton Loch, at one time the second largest lake in the shire, was drained in 1862. At PORT-LOGAN there is an artificial fish-pond, built among the rocks on the shore, in which some tame cod and other sea-fish are kept. Springs and wells of reputed miraculous or medicinal qualities are met with all over the county.

Geology.—There is little variety in the geological formations of Wigtownshire. If we except a narrow strip of ground on the W shore of Loch Ryan, which is occupied by Carboniferous and Permian rocks, the rest of the county is composed of Silurian strata. Representatives of the Llandello, Caradoc, Llandovery, and Wenlock divisions of the Silurian system are met with in the county. Magnificent sections of the members of this system are exposed on the rocky coast line facing the Irish Channel, where the innumerable flexures of the strata may be studied to advantage. The prevalent strike of the rocks throughout the county is NE and SW, and owing to rapid reduplications of the strata certain subdivisions of the system are made to cover a great breadth of country. The Moffat black shale series, including the Glenkiln, Hartfell, and Birkhill divisions, are met with in various parts of the county. They are exposed at the surface along anticlinal folds, and yield the characteristic graptolites occasionally in profusion. In the Cairn Ryan slate quarry, on the shore of Loch Ryan, some thin seams of black shale yield a few forms of Llandello age, of which *Didymograptus superstes* is the most characteristic. In the broad belt of country stretching northwards from Cairn Ryan to Portpatrick and Newton-Stewart there are occasional arches of black shales in the heart of grits, greywackes, and shales. In the Cree, not far to the north of Minnigaff church, and again on the shore about 2 miles to the south of Portpatrick, representatives of the Glenkiln and Hartfell divisions of the black shales are met with, passing upwards into greywackes and shales on both sides of the folds. The latter may probably be of Caradoc age. To the south of a line drawn from about the head of Luce Bay by Newton-Stewart to Cairnsmore of Fleet, there is a great development of Llandovery strata stretching southwards to the Mull of Galloway and the Isle of Whithorn. They consist of grey, brown, and purple grits, greywackes, and shales, which are singularly destitute of fossils. Within this area, however, there are small arches of the Moffat black shales, as, for instance, in Clanyard Bay, N of the Mull of Galloway, and in Drumbredan Bay, showing the Birkhill black shales marking the base of the Llandovery rocks.

On the shore, between the Isle of Whithorn and Burrow Head, the Llandovery rocks pass upwards into the Wenlock beds. The latter consist of brown crusted greywackes, flags, and cleaved shales, with which are associated numerous thin bands of dark shale yielding *Graptolithus Flemingii*, *G. priodon*, *Cyrtograptus Murchisoni*, with fragments of *Ceraticocaris* and *Orthoceras*.

The Silurian strata are pierced by various igneous masses of small extent; all the large granite areas in Galloway being included in the county of Kirkcubright. A few miles to the N of the Mull of Galloway, at Lagantulloch Head, there is a mass of granite covering an area of about 2 square miles. A mass of diorite, consisting of trichlinic felspar, hornblende, with quartz and iron pyrites, occurs on the hills about 8 miles N of Kirkcowan, while another patch is to be found near Glenluce. Dykes of the same rock are also met with near the shore to the E of Mochrum Loch. There are numerous intrusive dykes of different varieties of quartz-felsite scattered throughout the county, the most interesting being certain talcose felstones or mica traps occurring at Innerwell Point and on Culvennan Fell.

The narrow band of Carboniferous strata has been

traced for a distance of about 8 miles along the W side of Loch Ryan, where they form a fringe about $\frac{1}{2}$ mile in breadth between the Permian and Silurian rocks. From the fact that they are covered unconformably by the Permian strata, and from the nature of the organic remains and the characters of the beds, they have been provisionally classed with the Calcareous Sandstone series by the officers of the Geological Survey. The strata consist of red, grey, and mottled sandstones with purple clays. All the fossils with one exception consist of plant remains, comprising *Stigmario*, *Calamites*, *Althopteris lonchitica*, etc. From the nature of these organic remains, it is not improbable that the strata containing them may belong to the Millstone Grit or Coal Measures.

Between the belt of Carboniferous strata just referred to and the W shore of Loch Ryan there is a strip of Permian strata about 9 miles in length and about 1 mile in breadth, consisting throughout of coarse breccia with thin seams of sandstone. Lithologically the rock closely resembles the Permian breccias of Ayrshire. It presents a tumultuous appearance, the blocks being angular or sub-angular, and measuring, in many cases, a foot across. From the nature of the included blocks it is evident that they have been derived from the denudation of the Silurian strata. On the Geological Survey map a basalt dyke is marked as penetrating this breccia, from which it may be inferred that it belongs to the later series of Tertiary dykes so common in the W of Scotland.

In the W portion of the county the general trend of the ice-marking is S and SSW, and the same direction is observable in the undulating ground between Stranraer and Whithorn. Along the banks of the Cree, however, the ice-markings run more or less parallel with the valley. These markings were evidently produced by the great ice-sheet which radiated from the tract of high ground on the borders of Kirkcubrightshire and Ayrshire. A remarkable feature connected with the boulder-clay in this county is the arrangement of this deposit in oval-shaped mounds or 'drums,' usually coinciding in trend with that of the ice-markings. The peculiar appearance presented by these ridges is admirably seen on both sides of the Wigtownshire railway, between Newton-Stewart and Glenluce, and again between Wigtown and Whithorn. In this county there are certain sections where the boulder-clay yields broken fragments of shells, as for example at Port Logan and in Clanyard Bay on the W shore of the Mull of Galloway. In the tough laminated clays used as brick clays at Clashmahew near Stranraer, organic remains have been met with, but these brick clays do not occur at much higher levels than 60 feet. Shelly boulder-clay has also been noted in the course of the Geological Survey of the district at various localities on the shores of Loch Ryan. There can be little doubt that this deposit is more recent than the typical lower boulder-clay of inland districts, which is invariably unfossiliferous. The numerous boulders scattered over the low grounds of Wigtownshire is another characteristic feature of the glaciation of this county. Conspicuous amongst these erratics are the blocks of grey granite derived from the great mass of Cairnsmore of Fleet, and the mass lying between the Kells and Merrick ranges.

Along the shores of Loch Ryan and Luce Bay, and again along the estuary of the Cree, there are strips of flat land representing the 25-feet and 50-feet beaches. Sometimes these are partly overgrown, and more frequently the lower raised beach is obscured by great accumulations of blown sand. The largest development of sand dunes occurs in Luce Bay, between Balgreggan and the mouth of Piltanton Burn.

Economic Minerals.—Galena has been worked at the Knockibae mines, N of New Luce, and a vein of copper pyrites has been explored at Wauk Mill, near Kirkcowan. At Tonderghie, S of Whithorn, there is a vein of barytes associated with iron and copper pyrites. At Cairn Ryan the grey shales and flaggy bands have been extensively wrought for roofing slates, and also for pavement stones.

The grey shales, yielding graptolites at Grennan, N of the Mull of Galloway, have also been quarried for roofing-slates. Excellent building stone is obtained from the Carboniferous sandstones on the W side of Loch Ryan, and from the greywacke bands and massive grits of the Silurian formation. The more flaggy bands in the grit series supply excellent lintels. The harder bands in the Silurian rocks are extensively used for road metal. The stratified clays have been used for the manufacture of bricks. Another noteworthy feature is the great development of peat mosses in the low grounds of the county, which have yielded an abundant supply of fuel. The extent of these peat mosses is somewhat remarkable, as may be seen by referring to the published survey maps of that region. (See Geological Survey Maps, 1, 2, 3, 4, and the explanations accompanying these sheets.)

Soil.—The soil of the low flat lands near the Cree and at the head of Wigtown Bay is all alluvial; and the Carse of Baldoon, which includes the larger part of these lands, is a strong clay, not unlike the rich soil of the carses on the Forth. The valley between Loch Ryan and Luce Bay has a deposit of sea-sand, interspersed with tracts of reclaimed shallow flow moss; and the low belt on the W side of Loch Ryan is also sandy. The soil of most of the Machers and much of the Moors is a dry hazel-coloured loam, often inclined to gravel, and generally incumbent upon rock. The Rhinns have a diversified and excellent soil, to a large extent arable. The central and northern districts of the Moors have extensive tracts covered with a soil of peat earth; and the large and deep 'flows' (as these peat mosses are called)—some from 8 to 10 miles long—while they chill the air with humid exhalations, prevent vegetation, and are quite useless for grazing purposes.

Climate.—The climate corresponds with the position of the county, the configuration of its surface, and the character of its shores. Rain falls often, and in large aggregate quantity, yet seldom without intermission during an entire day. The south-westerly winds usually bring rain; yet, except where artificial drainage has been neglected, it rarely injures the fruits of the soil. Snow seldom lies long; and frost is not often severe or protracted. The prevailing winds are from the S and the SW, and the severest storms of wind and the heaviest falls of rain and snow are from some point between the SW and the SE. A heavy gale sometimes blows from the NW, but generally subsides in the evening of the same day; and hence has arisen a local proverb that 'an honest man and the north-west wind go to sleep together.' The climate on the whole is favourable to health and longevity.

Wigtownshire is almost exclusively an agricultural and grazing county, its manufactures, commerce, and mining being but of little importance. According to the returns of 1891, 5748 of the entire population were engaged in agricultural, and 4652 in industrial, pursuits. Commerce employed 931, other occupations 3341, leaving 21,390 unoccupied and unproductive. Agriculture seems to have attained a considerable degree of excellence in this district in comparatively early times; and under the Baliols, before the 14th century, was flourishing. In the succeeding troublous times, however, the art relapsed, and for four centuries made but slow and feeble progress. In the first half of the 18th century improvements began, at first under Marshal Lord Stair, who devoted his retirement after 1728 to the encouragement of enlightened agriculture on his lands in Wigtownshire and in West Lothian. His example was gradually followed. In 1760 considerable improvements were introduced on the Earl of Selkirk's estate of Baldoon, and the Earl of Galloway also soon entered the same field. A better rotation of crops, the use of modern implements, the enclosing of fields, and other improvements had good effect; and these, seconded by the efforts of intelligent agriculturists and of the Agricultural Society of Dumfriesshire, brought about a considerable advance in farming by the beginning of the 19th century. At present the best districts offer as fine

specimens of high-farming as are to be seen anywhere in the country; and the farmers of the other regions are only hindered by the difficulties of the soil from giving to the general face of the country as cultivated an aspect as that of more favoured localities. The farms are mostly of a medium size, and are usually let on leases of nineteen years. In 1894 there were 153,005 acres under crops, bare fallow, or pasture. The following table exhibits the acreage under the chief crops in various years:—

	1855.	1874.	1884.	1894.
Wheat,	7,343	4,969	1,194	456
Barley or Bere,	1,589	1,304	1,021	981
Oats,	34,602	31,431	35,579	35,313
Rye,	150	100	124	60
Beans,	1,089	408	318	236
Potatoes,	3,843	2,116	2,927	1,530
Turnips and Swedes,	15,289	16,098	16,233	16,429
Cabbages, Rape, etc.,	44	75	74	248
Other Green Crops,	...	247	182	174
{ Bare Fallow,	845	614	372	217
{ Grass in Rotation,	61,658	45,574	67,352	68,626
{ Permanent Pasture,	...	39,760	21,894	30,527

In 1893, 5 acres were under orchard, 43 in nursery grounds, and 7735 in coppice and plantations, excluding garden shrubberies.

The live stock falls entirely under the description already given under KIRKCUDBRIGHTSHIRE, and the authority there referred to. The following table shows the number of the various kinds of stock in different years:—

	1878.	1880.	1884.	1894.
Horses,	5,792	5,585	5,800	6,750
Cattle,	40,401	40,144	43,681	47,533
Sheep,	131,030	126,967	118,940	119,660
Pigs,	9,491	7,412	10,323	11,419

Wigtownshire is not a very well wooded county, although a good deal has been done in the way of planting since the time of Marshal Stair, already alluded to. It is said that he and his father planted annually, for a considerable number of years, as many as 20,000 trees. The policies of many of the private mansions are finely adorned with timber. The grounds of Castle-Kennedy in particular may be mentioned in this connection.

Manufactures and Trade.—The absence of coal effectually restrains the manufactures of the county, so that no really important manufacturing industry has been established in it. There are isolated establishments, as for instance, the distillery at Bladenoch and the woollen mills in Kirkcovan parish, but these do little more than supply part of the local demand. The commerce consists almost wholly in the exchange of the produce of the soil, cattle, and sheep, for manufactured and other articles for home consumption. At one time timber was imported from America, and timber and iron from the Baltic, but these trades have now dwindled, although some timber is still imported from Norway. A large transit trade was also formerly maintained through the county between the north of Ireland on the one side, and the south of Scotland and north of England on the other. The passage of large herds of Irish cattle and of much British merchandise, together with the presence of numerous travellers, conferred a considerable local benefit, which, however, has now almost entirely been diverted by the development of steam navigation. Stranraer, however, has some little shipping trade; and there is a daily steamer passenger and goods service between this port and Larne. The various smaller ports carry on a more or less brisk coasting trade. The extension of railways into the county has also tended in some degree to bring back a proportion of the former transit trade. There are three lines of rail in Wigtownshire. The Portpatrick Joint railway, opened in 1861, and leaving the Glasgow and South-Western system at Castle-Douglas, enters the county near Newton-Stewart, and runs westward to Stranraer, and thence SW to

Portpatrick. The Wigtownshire stations are Newton-Stewart, Kirkcowan, Glenluce, Dunragit, Castle-Kennedy, Stranraer Harbour, Stranraer, Colfin, and Portpatrick. The Wigtownshire railway, branching from the Portpatrick line at Newton-Stewart, was authorised in 1872, and opened as far as Garieston in 1875, and was thence continued S to Whithorn in 1877, a total distance of 1½ miles. It has stations at Newton-Stewart, Wigtown, Kirkcinner, Whauphill, Sorbie, Millisle, Garieston, and Whithorn. Coaches run in connection with this line between Whauphill and Port William. The third line is the southern part of the GIRVAN AND PORTPATRICK RAILWAY, opened in 1876, which enters the county from Ayrshire at the N of the parish of New Luce, and thence runs nearly due S to join the Portpatrick railway at East Challock near Dunragit. It has Wigtownshire stations at Glenwhilly and New Luce. The roads of the county are numerous, convenient, and good. For many years the only practicable road for wheeled vehicles was the old military road, constructed in the latter half of the 18th century, which led from Newton-Stewart to Portpatrick. A newer and more level road now connects these points. Other main routes are the road from Glasgow to Stranraer, along the E side of Loch Ryan; the road running southwards from Newton-Stewart to Wigtown and Whithorn; and the road north-westward from Whithorn to Stranraer, by the shore of Luce Bay and through Glen Luce. Cairnryan Road, on the first of these routes, was so destroyed by a storm in December 1894, that it was estimated that to put it in repair would take £5000 as the county's share alone.

The royal burghs in the county are Wigtown, Stranraer, and Whithorn; the burghs of barony are Newton-Stewart, Glenluce, and Portpatrick; the chief villages are Aird, Bladenoch, Cairnryan, Drumore, Eldrig, Garieston, Innermessan, Isle of Whithorn, Kirkcolum or Stewarton, Kirkcowan, Kirkcinner, Lochans, Marchfarm, Merton, Monreith, Myreton, New Luce, Port Logan, Port William, Sandhead, Slohabert, Sorbie, and Stoneykirk. The chief seats are Galloway House (Earl of Galloway), Culhorn House (Earl of Stair), Ardwell, Barnbarroch, Castlewigg, Corsewell House, Craighlaw House, Craigenveoch, Dunragit, Dunskey, Freugh, Genoch, Glasserton House, Glengyre, Isle of Whithorn Castle, Lochinch Castle, Lochnaw House, Lochryan House, Logan House, Monreith House, Penninghame House, Park Place, Physgill, Tonderghie, and Tor House, most of which have been separately noticed.

The county is governed by a lord-lieutenant, a vice-lieutenant, 13 deputy-lieutenants, a sheriff (who is also sheriff of Kirkcudbrightshire and Dumfriesshire), a sheriff-substitute, and about 90 justices of the peace. Sheriff and other courts are held at Wigtown and Stranraer, as detailed in the articles on these towns. The County Council is composed of 28 members, consisting of 23 for as many electoral divisions, 3 for the burgh of Stranraer, and 1 each for the burghs of Wigtown and Whithorn. The divisions are classed into districts, Lower and Upper—the former having 11 representatives and the latter 12. The council is divided into the following committees:—The Standing Joint Committee (composed also of Commissioners of Supply), the County Road Board, and the Executive Committee under the Contagious Diseases (Animals) Act (composed also of non-councillors). The police force of the county numbered, in 1892-93, 23 men, with a chief constable receiving a salary of £220. The county returns one member to parliament, and its constituency in 1893 was 5679. The value of property in Wigtownshire has been subject to some fluctuation. In the time of Charles II. lands were offered to whoever would pay the public burdens on them. With agricultural improvements and settled government, however, the value has risen pretty steadily. Valued rent in 1674, £5634; 1815, £143,425; 1856 (exclusive of royal burghs), £156,850; 1876, £222,866; 1884-85 (landward), £223,846; 1893-94 (landward), £202,124; railways, £14,729; (in burghs), £81,323; railways, £1205. Wigtownshire ranks twen-

tieth among Scottish counties in point of density of population, having 74 inhabitants to the square mile—the average for the entire country being 135. Pop (1801) 22,918, (1811) 26,891, (1821) 33,240, (1831) 36,258, (1841) 39,195, (1851), 43,389, (1861) 42,095, (1871) 38,830, (1881) 38,611, (1891) 36,062, of whom 19,086 were females, and only 68 Gaelic-speaking, though there is a strong Celtic element in the population, and Celtic names are common. Houses (1891) occupied 7001, vacant 512, building 37.

The civil county includes the 17 parishes of Glasserton, Inch, Kirkcolum, Kirkcowan, Kirkcinner, Kirkmaiden, Leswalt, Mochrum, New Luce, Old Luce, Penninghame, Portpatrick, Sorbie, Stoneykirk, Stranraer, Whithorn, and Wigtown. For administrative purposes the county is divided into the Lower District, embracing the Machers and the Moors; and the Upper District, containing the Rhinns. In this sense the Rhinns are held to include the parishes of Old and New Luce, Inch, and Stranraer, besides the 5 parishes in the peninsula proper. All the parishes are assessed for the poor; and, together with Ballantrae in Ayrshire, form Wigtownshire poor-law combination, with a poorhouse at Stranraer, having accommodation for 352 inmates. The Kirkcudbright and Wigtown Rifle Volunteers have their headquarters at Newton-Stewart; the Ayr, Wigtown, and Kirkcudbright Artillery Volunteers in Ayrshire. The registration county gives part of Penninghame to Kirkcudbrightshire, and in 1891 its population was 35,880.

The civil county is divided among nineteen *quoad sacra* parishes and part of another, viz., those already mentioned, with Bargrennan, Lochryan, and Sheuchan. Eleven of these are in the presbytery of Stranraer, the remainder in that of Wigtown, and all in the synod of Galloway. In 1893 there were 53 schools (50 of them public), with aggregate accommodation for 7849 children, 6597 on the registers, and an average attendance of 5236.

History.—The history of this county has already been sketched in the article on GALLOWAY, and various points in it are touched upon under KIRKCUDBRIGHTSHIRE. To these articles the reader is referred for further information. Attempts to erect western Galloway into a shrievalty seem to have been made as early as the 12th century; and in the 13th century, at the death of Alexander III., while the Baliols were lords of Galloway, it was certainly a sheriffdom. In 1341 David II. formed the county into an earldom, and conferred it upon Sir Malcolm Fleming, with a regality jurisdiction which greatly curtailed the power of the sheriff; and in 1372 this earldom, with its accompanying powers, passed into the hands of the Douglasses, who were then lords of Galloway. In 1451 Andrew Agnew was confirmed as Sheriff of Wigtownshire, and for 230 years his descendants held that office without interruption. In 1681, however, it was virtually transferred to Graham of Claverhouse, for the purpose of crushing the Covenanters; but the Revolution again restored it to the family of Agnew, who held it until the abolition of hereditary jurisdictions in 1747, when £4000 was paid as compensation for its surrender. The first sheriff-depute under the new régime was Alexander Boswell of Auchinleck, who afterwards rose to the bench with the title of Lord Auchinleck. Jurisdictions of regality also existed prior to 1747 over the lands respectively of the Prior of Whithorn, the Abbot of Glenluce, the Abbot of Souleseat, and the Bishop of Galloway; which passed into the hands respectively of the Earl of Galloway, Dalrymple of Stair, Agnew of Lochnaw, and the Earl of Cassillis. In 1747 compensations of £166 and £450 were paid for the first two, while nothing was paid for the others. A baronial jurisdiction over the lands of Inch, held by the Dalrymples, was also abolished without compensation. Several other baronial jurisdictions had become extinct or merged in larger jurisdictions before the general abolition.

Antiquities.—Allusion has already been made under GALLOWAY to the two towns of the Novantæ—Leuco-

pibia and Rerigonium—which existed in this district. The early races have left a considerable number of traces of their existence in local names, as well as in the shape of sepulchral cairns, tumuli, and mounds. Standing-stones occur in several localities, as at Thorhouse and Drumtroddan; and traces of forts are frequent, as for instance on the summit of Cairnriat. Mote-hills of different dates are still extant; and many of the caves, especially in the parishes of Inch, Portpatrick, Kirkmaiden, and Glasserton, are popularly associated with early events and men in the history of the county. The chief trace of the Roman appearance in the district in 80 A.D. is the camp at Rispain near Whithorn. The DEIL'S DYKE, a great defensive work of the Romanised Caledonians, extended from Loch Ryan to the upper part of the Solway Firth, and has left some vestiges in the county. Castles, fortalices, and other fortifications of various dates—from that of the Romanised Caledonians to the close of the feudal period—were very numerous; and their remains are still found in all stages of decay, though many, like Wigtown Castle, have completely vanished. Among those that still linger may be mentioned Auchness, Baldoon, Carscreugh, Claynurd, Corsewall, Crosswell, Cruggleton, Dornal, Dunskey, Eggersness, Feather, Galdenoch, Garthland, Kennedy, Killessar, Lochmaberry, Lochnow, Long, Mochrum, Myrtoun, Physgill, Sorbie, Stewart, and Synniness. Several of these are separately noticed. The castles on the sea-coast have mostly crumbled very much into decay. Different accounts of their origin are given, some authorities being of opinion that they were defences against the Scandinavian descents, others holding that they were erected by the Scandinavian rovers themselves. The chief monastic institutions in the county in Roman Catholic times were Whithorn Priory, Glencuce Abbey, Souleseat Abbey, and Wigtown Priory. There are several ruined chapels of interest in the shire, as for example those of Kirkmadrine in Sorbie, and at Kirkmadine.

In addition to the authorities under Galloway and Kirkcudbrightshire, see W. M'Ilwraith's *Visitor's Guide to Wigtownshire*.

Wilkietown, a post-office hamlet in Kirknewton parish, Edinburghshire, 3 miles E by N of Midcalder.

William, Fort, a small town in Kilmallie parish, Inverness-shire, near the head of salt-water Loch Linne and the southern end of the Caledonian Canal, in the mouth of Glen Nevis, with a terminal station on the West Highland railway (opened 1894), 66 miles SSW of Inverness, 35 NNE of Oban, 60 WSW of Kingussie, 134 NW of Edinburgh, and 122½ NNW of Glasgow by railway. A fortress, built here by General Monk in 1656, during Cromwell's protectorate, from a neighbouring castle took the name of the Garrison of Inverlochy, and had accommodation for 2000 men. But it was chiefly earth-built, and altogether of a temporary character, so that General Mackay in July 1690 replaced it with the present smaller stone structure, and renamed it Fort William, after William III. An irregular work of a triangular form, with ditch, glacis, and ravelin, a bomb-proof magazine, two bastions mounting 15 twelve-pounders, and accommodation for 104 men, this fort was sold by Government about 1860 to Mrs Cameron Campbell of Monzie, and a considerable portion of it was destroyed at the formation of the railway. At it the Glencoe murderers divided their spoil, and in the spring of 1746 it was vainly bombarded by the Jacobites under Brigadier Stapleton. The town itself bore the name first of Gordonsburgh, from being built on the property of the Gordons, and then of Maryburgh, after King William's consort. It chiefly consists of three parallel lines of buildings, forming two streets, and containing several good hotels and shops, whilst in the suburbs are a number of handsome villas. A favourite tourist resort, Fort William has a post office, with money order, savings bank, and telegraph departments, branches of the Bank of Scotland and the British Linen Company and National Banks. There are also a gas company, a public hall, a handsome courthouse, a police station, a substantial

stone quay (1834), a masonic lodge, a volunteer corps, boating, football, and shinty clubs, an hospital founded by Andrew Belford, Esq. of Glenfintaig, for the poor of Kilmallie and Kilmonivaig parishes, and fairs on the fourth Wednesday of March, the second Wednesday of June and November, the second Thursday of July, and the Tuesday fortnight before Falkirk October Tryst. In the neighbourhood are extensive distilleries, and the town is the centre of a large sheep-farming district. Fishing, too, is carried on to a small extent. A new church and manse for Duncansburgh *quoad sacra* parish were built at Fort William in 1881 at a cost of £5000; but the great ornament of the place is St Andrew's Episcopal church (1880-81), an Early French Gothic structure, with tower and spire, a chime of four bells, stained windows throughout, and all its fittings of the most sumptuous description. In the baptistery there are memorial windows to Bishops Low, Ewing, and Mackerness, and to Dr Pusey. The Roman Catholic church of the Immaculate Conception was built in 1863, and a new Free church in 1889. The public school, accommodating 365 pupils, and built at a cost of £3000, was opened in 1876; and the Episcopal and Roman Catholic schools are likewise handsome and recent erections. In or near the town are monuments to Wm. Kennedy, M.D., Capt. Peter Cameron, and Ewen Mac-lachlan, the Gaelic poet and scholar. Fort William was made into a police burgh in 1874, and is governed by a provost, 2 bailies, and 6 commissioners. It is the seat of a sheriff court held every Thursday during session. In connection with the railway there is a branch loop-line to Banavie, from which an extension westward to Mallaig, on the southern shore of the entrance to Loch Nevis, and opposite the S extremity of the island of Skye, is intended. (See WEST HIGHLAND RAILWAY.) The great attraction of the district is the lofty BEN NEVIS, visited annually by several thousand people. In connection with the Observatory at the summit of the mountain a low-level station was established in 1890 at Fort-William, where continuous weather records are made by self-recording apparatus. Pop. (1841) 1026, (1861) 1104, (1871) 1212, (1881) 1594, (1891) 1870, of whom 938 were females. Houses (1891) inhabited 271, vacant 9, building 1.—*Ord. Sur.*, sh. 53, 1877.

William, Port. See PORT-WILLIAM.

Wilsontown, a mining village, with a public school, in Carnwath parish, E Lanarkshire, on Mouse Water, 2 miles below its source, and on the road from Lanark to West Calder. By road it is 8½ miles NNE of Lanark, 6 SE of Shotts Ironworks, and 6 NNE of Carnwath village; whilst by a branch line of the Caledonian, formed under an act of 1859, it is 2½ miles WNW of Auchengray Junction and 3½ N of Carstairs. Founded in 1779 by two brothers of the name of Wilson for the manufacture of pig-iron, it thrived for a time so well that in 1807 its works supported upwards of 2000 persons, with aggregate wages of fully £3000 per month. They were closed, however, from 1812 to 1821, when they were for some years resumed, but on a very diminished scale, by Mr Dixon of Calder Ironworks; and coal mining is now the staple industry. There is also a Free church. The sculptor James Fillans (1803-52) was a native. Pop. (1841) 113, (1871) 585, (1881) 803, (1891) 651.—*Ord. Sur.*, sh. 23, 1865.

Wilton, a parish of Upper Teviotdale, Roxburghshire, containing, on the left bank of the river Teviot, the thriving Wilton or north-western suburb of the parliamentary burgh of Hawick. It is bounded NW by Ashkirk and Lilliesleaf, NE by Minto, SE by Cavers and Hawick, and SW by Hawick and Robertson. Its utmost length, from NE to SW, is 5½ miles; and its utmost breadth 3½ miles. There was an exchange of territory between this parish and that of Hawick in 1891, when the Boundary Commissioners transferred to the latter a small portion of Wilton parish, comprising only 1 acre, that was separated from the rest of the parish by the Common Haugh of Hawick, and gave to Wilton the portion of Hawick parish situated at Albert Mills. BORTHWICK Water runs 1½ mile east-by-south-

ward along the south-western boundary to the Teviot, which itself flows $5\frac{1}{2}$ miles north-eastward along or close to all the south-eastern boundary. Where it quits this parish, near Hassendeanburn, the surface declines to 380 feet above sea-level, and thence it rises to 586 feet near Burnhead, 840 at Heip Hill, 880 at Borthaugh Hill, 926 at Wiltonburn Hill, and 1043 at Drinkston Hill. The haughs and hill-screens which recede from the Teviot are everywhere beautiful; and part of them, a little S of the middle, forms the larger section of the fine hill-locked landscape of Hawick's environs. Though the interior is all hilly, the heights are broad-based, and gentle in ascent; and they generally admit the dominion of the plough, and become pastoral only towards the north-western boundary. About two-thirds of the entire area are in tillage; and most of the other third, though now in permanent pasture, has been at one time cultivated. About 100 acres are covered with plantation. Silurian rocks predominate; and the soil, which ranges from alluvium to shallow earth, is mostly fertile. Principal residences are Briery Yards, Bucklands, Sillerbithall, Stitches, and Wilton Lodge. Wilton is in the presbytery of Jedburgh and the synod of Merse and Teviotdale; the living is worth £936. A very handsome parish church, Early English in style, and containing 950 sittings, was opened in 1861. Its predecessor, built in 1762, after extensive repairs and alterations, is now used as a mission hall. A chapel of ease to Wilton Church was opened in Wellington Road in 1886. Some years before 1786 one of the earliest Sunday schools in Scotland was started by the minister, Mr William Crawford (1676-1742), who was author of *Dying Thoughts*. Three public schools—Clarilaw, Dean, and Stouslie—with respective accommodation for 65, 66, and 67 children, had (1893) an average attendance of 31, 66, and 15, and grants of £41, 6s., £50, 15s. 6d., and £26, 2s. Pop. of entire parish (1801) 1307, (1831) 1870, (1861) 3357, (1871) 3936, (1881) 5782, (1891) 6375; of portion in parliamentary burgh (1881) 4848, (1891) 5437.—*Ord. Sur.*, sh. 17, 1864.

Winchburgh, a village in Kirkcaldon parish, Linlithgowshire, $11\frac{1}{2}$ miles W of Edinburgh. It has a station on the North British railway, a post office with money order and savings bank departments, an Established mission church (opened 1891), and a public school. Pop. (1881) 115, (1891) 424.

Windygates, a village in Markinch parish, Fife, $\frac{1}{2}$ mile N of CAMERON BRIDGE station. It has a post office, with money order, savings bank, and telegraph departments. Pop., with Cameron Bridge, (1871) 420, (1881) 410, (1891) 522.—*Ord. Sur.*, sh. 40, 1867.

Winton Castle, a mansion in Pencaitland parish, Haddingtonshire, on the left bank of Tyne Water, in a large and finely-wooded park, near Winton station on the Macmerry branch of the North British railway, and 3 miles SE of Tranent. Built by the third Earl of Winton in 1620, it is a striking architectural structure, 'in many respects a work of original genius,' and, though following the Tudor style in its stacks of columned chimneys and in the decorated architraves of its windows, is quite distinguishable from that era. Part of it is modern. In the interior the fretted ceilings of the drawing-room and 'King Charles's room' are worthy of special notice. The Winton estates, forfeited by the fifth Earl of Winton in 1716, were sold to the York Buildings Company, and on its failure part of the property, including Winton Castle, was acquired by James Hamilton, Lord Pencaitland, whose great-great-granddaughter, Mary Campbell, in 1813 married James, fifth Lord Ruthven (1777-1853), and died in 1885. The present owner is Mrs Nisbet Hamilton Ogilvy.—*Ord. Sur.*, sh. 33, 1863. See *SERON*; vol. iv. of *Billings' Baronial Antiquities* (1852); and vol. ii. of *John Small's Castles and Mansions of the Lothians* (1883).

Wishaw, a town and *quoad sacra* parish in Cambusnethan and Dalziel parishes, Lanarkshire. The town was constituted a police burgh in 1855, and extended in 1874 so as to comprise Wishaw proper, CAMBUSNETHAN village, and CRAIGNEUK village. Wishaw, standing

420 feet above sea-level, within 2 miles of the Clyde's right bank, and $\frac{1}{2}$ mile S of South Calder Water, has a station on a section (1880) of the Caledonian, constructed at a cost of £150,000 and extending 6 miles north-westward from Law Junction to Carfin. It is $8\frac{1}{4}$ miles ESE of Motherwell, 5 E of Hamilton, 15 ESE of Glasgow, and 32 WSW of Edinburgh. Laid out in 1794, and pleasantly situated on the SW face of a hill, it was so late as 1840 merely a large village, but since has grown rapidly to the dimensions of a considerable town, and is the centre of a vast mineral trade. Wishaw is famous for the excellent quality of its coal. Extensive iron and steel works, restarted in 1894, having four blast furnaces and being provided with ammonia works for the utilisation of the gases, employ several hundred men. There are other iron and steel works, nail works, railway waggon works, iron foundries, a distillery, fire-clay works, a sewing factory (erected in 1894) employing over 100 girls, and a steam laundry (opened in 1895). There are also a post office, with money order, savings bank, and telegraph departments, branches of the British Linen Co., Clydesdale, Commercial, and Royal Banks, several hotels, corporation gasworks, a town-hall, Victoria Public Hall, a public library, a public park, a golf course (opened in 1894), a bowling club, public reading-room and library, fever hospital, a Saturday Liberal newspaper, the *Wishaw Press* (1870), the *Wishaw Herald* (published on Friday), a weekly market on Tuesday and Friday, fairs on the second Thursday of May and the fourth Thursday of October, etc. The Established Church has four places of worship, the Free Church two, the United Presbyterian two; and there are also Reformed Presbyterian, Primitive Methodist, Evangelical Union, Baptist, Scotch Episcopal (1893), and Roman Catholic churches. A handsome new hall for Cambusnethan parish church, capable of seating 600 persons, was opened in 1894. Of schools there are nine, six of them under the School Board. A handsome new school, erected by the Cambusnethan School Board at a cost of £11,000, was opened in 1895, in which accommodation is provided for over 1000 children, for the marshalling and drilling of whom there is a rectangular hall, with galleries all round, while special provision has been made for secondary education. Few Scottish towns have grown more rapidly than Wishaw, such growth being due to the great extension of its mineral industries. These, at the census of 1891, employed 2451 of the 5145 persons here of the 'industrial class'—1449 being engaged in coal-mining, 903 in the iron manufacture, etc. Under the Burgh Police Act of 1892 it is governed by a provost, 4 bailies, and 7 commissioners. A sheriff small debt court is held on every third Thursday, and a police court on every Monday, or as occasion requires. Valuation (1885) £26,500, (1893) £28,582. Pop. of Wishaw proper (1841) 2149, (1851) 3271, (1861) 6112, (1871) 8812, (1881) 8953, (1891) 10,385; of police burgh (1881) 13,112, (1891) 15,252, of whom 8189 were males, and 2082 were in Cambusnethan, 2785 in Craigneuk; of *q.s.* parish (1881) 9791, (1891) 11,187.—*Ord. Sur.*, sh. 23, 1865.

Wishaw House, a mansion in Cambusnethan parish, Lanarkshire, near the left bank of South Calder Water, $1\frac{1}{4}$ mile NNW of Wishaw. It is a castellated edifice, enlarged and improved, from designs by Gillespie Graham, not long before 1839. Its owner is Alexander Charles Hamilton, tenth Lord Belhaven (b. 1840; suc. 1893).

Wisp Hill. See EWES.

Wiston and Robertson, a united parish of the Upper Ward of Lanarkshire, in the E containing Lamington station, on the Caledonian railway, and near the left bank of the Clyde, $3\frac{1}{4}$ miles SSW of Symington Junction, $10\frac{1}{4}$ S by E of Carstairs Junction, and $37\frac{1}{2}$ SW by S of Edinburgh. Formed in 1772 by the union of the two ancient parishes of Wiston to the N and Robertson to the S, it is bounded NW and N by Carmichael, NE by Symington, E and SE by Lamington, S and SW by Crawfordjohn, and W by Douglas. Its utmost length,

from N to S, is $5\frac{1}{2}$ miles; its breadth increases northward from $1\frac{1}{2}$ to $5\frac{1}{2}$ miles; and its area is 13,209·781 acres, of which 70·005 are water. The CLYDE flows $5\frac{1}{2}$ miles north-north-eastward along or close to all the Lamington border, and DUNEATON WATER $1\frac{1}{2}$ mile eastward along all the southern boundary. Other affluent of the Clyde here are Robertson Burn, running through the middle of Robertson, and GARF WATER, through the middle of Wiston. Along the Clyde the surface sinks to 690 feet above sea-level; and thence it rises to 1169 at Harten Hill, 1237 at Robertson Lax, 1675 at DUNGAVEL Hill, and 2335 at TINTO, which culminates on the meeting-point of Wiston, Carmichael, Covington, and Symington parishes. The rocks are variously eruptive, Silurian, Devonian, and carboniferous. The eruptive rocks occur partly in dikes through the stratified rocks, partly in vast amorphous masses, of great variety of character, in the uplands. Limestone has been largely quarried; but workable coal has been sought for in vain. Much of the soil is very marshy; great part is either black loam or gravelly earth; and the rest is very diversified. According to the Ordnance Survey, 4606 acres are arable, 317 under wood, and 7976 heathy pasture. The township of Robertson was founded by Robert, the brother of Lambin, in the early part, and the township of Wiston by Wice about the middle, of the 12th century. HARDINGTON HOUSE, noticed separately, is the chief residence. The parish is in the presbytery of Lanark and the synod of Glasgow and Ayr; the living is worth £242. The parish church stands near the left bank of Garf Water, $\frac{1}{2}$ mile E of Wiston hamlet, $1\frac{1}{2}$ mile NW of Lamington station, and 7 miles SSW of the post-town, Biggar. It is an old building, enlarged after the union of the two parishes, and containing 355 sittings. In 1891 the old church of Robertson, suppressed in 1772, was rebuilt and opened free of debt. At ROBERTON village, $2\frac{1}{2}$ miles SSW, is a U.P. church, dating from 1801, and rebuilt in 1873; also a subscription library, golf and curling clubs, and Pratt's Trust. Two public schools, Wiston and Robertson, with respective accommodation for 69 and 50 children, had (1893) an average attendance of 31 each, and grants of £46, 12s. and £49, 9s. Valuation (1885) £8656, 18s., (1898) £7607, 16s. Pop. (1861) 786, (1871) 680, (1881) 562, (1891) 497.—*Ord. Sur.*, shs. 23, 15, 1865-64.

Wolfelee, a mansion in Southdean parish, Roxburghshire, on the right bank of Rule Water, 10 miles ESE of Hawick. Its owner is Edward Hay Mackenzie Elliot. See HOBKIRK.—*Ord. Sur.*, sh. 17, 1864.

Wolfhill, a village at the mutual border of Cargill and St Martins parishes, Perthshire, 6 miles NNE of Perth.

Woodburn, a modern mansion in the N of Newbattle parish, Edinburghshire, near the South Esk's right bank, 1 mile E of Dalkeith. It was recently purchased by the Marquis of Lothian.

Woodcot. See FALA and SOUTRA.

Wooden, a wooded dell on the south bank of the Tweed, about a mile below Kelso, Roxburghshire. There is an old-established woollen mill here, and $1\frac{1}{2}$ mile E by S of Kelso stands the mansion of Wooden House.

Woodend, a village in Newhills parish, Aberdeenshire, near the right bank of the Don, 1 mile N by W of Auchmull. Pop. (1871) 486, (1881) 529, (1891) 677.

Woodend, a village in Torphichen parish, Linlithgowshire, $1\frac{1}{2}$ mile WNW of Armadale.

Woodend, a mansion in Madderty parish, Perthshire, $1\frac{1}{2}$ mile W by S of Madderty station.

Woodhall, a mansion in Colinton parish, Edinburghshire, on the right bank of the Water of Leith, opposite Juniper Green. The estate was possessed by the Cunninghams for more than three centuries prior to 1701, when it was purchased by Sir John Foulis. See MILLBURN TOWER.

Woodhaven, a village in Forgan parish, Fife, on the Firth of Tay, opposite Dundee, and 1 mile SW of Newport.

Woodhead. See FVIE and CARSPHAIRN.

Woodhill, a mansion in Kirkmichael parish, Perthshire, near the right bank of the Ardlie, 10 miles NNW of Blairgowrie.

Woodhill House, a mansion in Barry parish, Forfarshire, 4 miles W of Carnoustie.

Woodhouse. See KIRKPATRICK-FLEMING.

Woodhouselee, a mansion in Glencorse parish, Edinburghshire, $6\frac{1}{2}$ miles S of Edinburgh and 4 N of Penicuik. Romantically seated on the eastern slope of the Pentland Hills, it is an irregular pile of different dates, and partly occupies the site of the 14th-century fortalice of Fulford or Foulfourde, at whose demolition in 1755 only a stone-vaulted room was suffered to remain as the lower storey of part of the new building. Its square corner tower was built in 1796, and its S wing in 1843, the latter from plans by Kemp, the architect of the Scott Monument at Edinburgh. There is a good collection of family portraits and other paintings, and the grounds contain some fine old trees. The estate was purchased in 1748 by William Tytler, W.S. (1711-92), Queen Mary's vindicator, and passed to his son, Alexander Fraser-Tytler, Lord Woodhouselee (1747-1813), author of *Elements of History*, etc., and father of the Scottish historian, Patrick Fraser-Tytler (1791-1849). The present proprietor is James William Fraser-Tytler, Esq. (b. 1854; suc. 1891). Old Woodhouselee—the 'haunted Woodhouselee' of Scott's *Grey Brother*—stood at the SE verge of the parish, on the North Esk's left bank, near Auchindinny. It belonged to the wife of James Hamilton or 'Bothwellhaugh,' but, according to tradition, was forfeited to enrich a greedy minion of the Regent Murray, who drove her forth on a winter's night, with her new-born babe to die on the bleak hillside. Hence Bothwellhaugh's murder of Murray at LINLITHGOW (1570) has been popularly regarded as a deed of retribution; but Dr Hill Burton has shown that the so-called 'victim of the Pentland Hills' obtained restitution of Woodhouselee as late as 1609. A considerable portion of the present mansion was built with the stones of Old Woodhouselee.—*Ord. Sur.*, sh. 32, 1857. See J.N. Small's *Castles and Mansions of the Lothians* (Edinb. 1883).

Woodielee. See LENZIE.

Woodside. See ABERDEEN.

Woodside. See BURRELTON.

Woodside, a mansion in the parish and near the town of Beith, Ayrshire. An old edifice, enlarged and modernised in the latter half of the 18th century, and again in 1848, it was a seat of the Ralstons from 1551 till 1772, and in 1834 was purchased by Wm. Patrick, Esq. See LADYLAND.—*Ord. Sur.*, sh. 22, 1865. See A. H. Millar's *Castles and Mansions of Ayrshire* (Edinb. 1885).

Woodside, a hamlet in Largo parish, Fife, $3\frac{1}{2}$ miles N of the town.

Woodville, a mansion in Colinton parish, Edinburghshire, $\frac{1}{2}$ mile SW of Colinton village. It was the home, from 1831, of the Rev. Arch. Alison (1757-1831), author of *Essays on Taste*; and at it died his eldest son, Professor Wm. Pulteney Alison (1790-1859).—*Ord. Sur.*, sh. 32, 1857.

Woodville, a mansion in St Vigeans parish, Forfarshire, $2\frac{1}{2}$ miles NW of Arbroath.

Woolmet. See NEWTON.

Wooplax, an estate, with a modern mansion and fine plantations, in Melrose parish, Roxburghshire, on the W side of Allan Water, $5\frac{1}{2}$ miles SSW of Lauder.

Wormistone House, a fine old mansion in Crail parish, East Neuk of Fife, $1\frac{1}{2}$ mile N of the town. Acquired by his ancestor about the beginning of the 17th century, it is the seat of David Clark Lindsay, Esq. (b. 1832; suc. 1872), who is heir-presumptive to the earldom of Lindsay. See KILCONQUHAR.—*Ord. Sur.*, sh. 41, 1857.

Wrath, Cape. See CAPE WRATH.

Wysey, a mansion in Kirkpatrick-Fleming parish, Dumfriesshire, near the left bank of Kirtle Water, $1\frac{1}{2}$ mile SE of Kirtlebridge station.

Y

YAIR, a mansion, with beautiful grounds, in Selkirk parish, Selkirkshire, on the right bank of the Tweed, 5 miles NNW of the town of Selkirk. It was built towards the close of the 18th century by Alex. Pringle of Whytbank, Scott's neighbour at Ashiestel (see *Introd.* to *Canto II.* of *Marmion*). His grandson, Alex. Pringle, Esq. (b. 1837; suc. 1857), the present proprietor, is male representative of the original Pringle stock.—*Ord. Sur.*, sh. 25, 1865.

Yarrow, a parish of Selkirkshire, whose church stands on the left bank of Yarrow Water, 9 miles W by S of Selkirk, under which there is a post office of Yarrow. It is bounded N by Peebles, Traquair, Innerleithen, and Stow, E by Selkirk, SE by Kirkhope, S by Ettrick, and W by Tweedsmuir, Drummelzier, and Manor. Its utmost length, from NE to SW, is 20 miles; its utmost breadth, $7\frac{1}{2}$ miles. The Megget district of the Peeblesshire parish of Lyne and Megget was transferred by the Boundary Commissioners in 1891 to the parish of Yarrow—Lyne and Megget being henceforth called simply Lyne parish. At the same time, however, Yarrow parish gave to the Peeblesshire parish of Traquair a detached portion that lay to the south of Cardrona, and an almost detached portion that lay to the north of Minchmoor, both portions being situated in the Tweed valley. **ST MARY'S LOCH** ($3 \times \frac{1}{4}$ mile; 814 feet above sea-level) lies to the SW, on the Ettrick boundary; and, issuing from its foot, **YARROW WATER** flows $11\frac{1}{2}$ miles east-north-eastward (for the last $2\frac{1}{2}$ along the Selkirk boundary), till it passes off, near Broadmeadows, into Selkirk parish. The **TWEED** flows 4 miles east-south-eastward, past Elibank and Ashiestel, along all the Innerleithen and Stow boundary. Beside Yarrow Water the surface declines to 585, beside the Tweed to 897, feet above the sea; and chief elevations to the N of the Yarrow, as one goes up the vale, are Elibank Craig (969), Ashiestel Hill (1314), *Elibank Law (1715), Brown Knowe (1718), *MINCHMOOR (1856), Blackgrain Rig (1652), Snouthed (1483), Mountbenger Hope (1784), Ward Law (1877), *Dun Rig (2433), *BLACKHOUSE HEIGHTS (2213), *Black Law (2255), *Deer Law (2065), *Broad Law (2723), and *Cairn Law (2352), where asterisks mark those summits that culminate on the confines of the parish. To the S of the Yarrow rise *Crook Hill (1580 feet), *Sundhope Height (1684), *BLACK KNOWE HEAD (1806), *Turner Clench Law (1809), Peat Law (1737), BOWERHOPE LAW (1570), and the Wiss (1932). Except along the Tweed and the lower reaches of Yarrow Water the parish is almost treeless, though once it was all included in **ETTRICK FOREST**. Now far the greater part of it is sheepwalks. Its endless memories, richer than those of any other parish, are recorded under **ALTRIVE**, **ASHIESTEEL**, **BLACKHOUSE**, **DOUGLAS**, **DRYHOPE**, **ELIBANK**, **HANGINGSHAW**, **MOUNT BENDER**, **ST MARY'S LOCH**, and **YARROW WATER**. Here, however, may be noticed the 'Yarrow Doctor,' John Rutherford, M.D. (1695-1779), whose father was parish minister, and who held the professorship of medicine in Edinburgh University from 1726 till 1765. Giving off a portion to Caddonfoot *quoad sacra* parish, Yarrow is in the presbytery of Selkirk and the synod of Merse and Teviotdale; the living is worth £410. Its ancient name was St Mary's or St Mary's of the Lowes (*de Lucubus*), and a pre-Reformation chapel stood at Deuchar or Duchoire, a little way NE of the present church. **KIRKHOPE** was disjoined from it in 1851. The parish church, built in 1640, contains 430 sittings, and in 1884 was adorned with two beautiful stained-glass windows, one on each side of the pulpit, in memory of Dr Russell and his father, ministers of Yarrow from 1791 to 1883. The subjects are 'Christ blessing little children' and the 'Resurrection.' There are also a chapel of ease, Megget and St Mary's, and a Free church. In connection with the parish church there is an en-

dowment called the 'William Thomson Linton Endowment,' for the promotion of the study and knowledge of holy scripture. Four public schools, Megget, Mountbenger, Yarrow, and Yarrowford, with respective accommodation for 19, 35, 91, and 45 children, had (1893) an average attendance of 8, 17, 50, and 23, and grants of £22, 18s., £30, 6s., £72, 13s. 6d., and £32, 19s. Pop. (1861) 643, (1871) 662, (1881) 639, (1891) 638, of whom 490 were in the ecclesiastical parish.—*Ord. Sur.*, shs. 24, 16, 25, 17, 1864-65. See James Russell, D.D., *Reminiscences of Yarrow* (1886; new ed. 1894).

Yarrow Water, a stream of Selkirkshire, issuing from the foot of **ST MARY'S LOCH**, and flowing $14\frac{1}{2}$ miles east-north-eastward, through Yarrow and Selkirk parishes, till, after a descent of 405 feet, it falls into Ettrick Water at a point 2 miles SW of Selkirk town. It is a capital trouting stream, the fish weighing from $1\frac{1}{2}$ lb. downwards; and its waters above Broadmeadows are open to the public.

'What's Yarrow but a river bare,
That glides the dark hills under?
There are a thousand such elsewhere
As worthy of your wonder.'

So Wordsworth lightly sang in the first of his 'Three Yarrows'—*Yarrow Unvisited* (1803), *Yarrow Visited* (1814), and *Yarrow Revisited* (1831). On the first occasion, he and his sister Dorothy had just left Scott, and were to meet him again next day at Melrose; on the second, 'the Ettrick Shepherd' guided him over the hills from Traquair to St Mary's Loch, and thence down the whole course of Yarrow to its union with the Ettrick; on the third he drove with Scott from Abbotsford to Newark Castle—they were both over sixty years old, and Scott was in two days to leave for Italy. Then there is **FOULSHIELDS**, the birthplace of Mungo Park, and the Yarrow's deep pool where Scott found him plunging one stone after another into the water, and anxiously watching the bubbles that rose to the surface. 'This appears,' said Scott, 'but an idle amusement for one who has seen so much adventure.' 'Not so idle, perhaps, as you suppose,' answered Mungo; 'this was the way I used to ascertain the depth of a river in Africa.' He was then meditating his second and last journey, but had told no one. **CARTERHAGH**, scene of the ballad of *Young Tamlane*, 'sweet **BOWHILL**' and **NEWARK CASTLE**, **PHILIPHAUGH**, where Leslie routed Montrose, and **HANGINGSHAW**, erst a stronghold of the 'Outlaw Murray'—these all are set amid the lower vale's

'Rich groves of lofty stature,
With Yarrow winding through the pomp
Of cultivated nature.'

But the very Yarrow, the Yarrow of mournful song, is that of the upper valley, where the 'deep, swirling stream, *fabilosus* as ever Hydaspes,' laves 'the inner sanctuary of the whole Scottish Border, of that mountain tract which sweeps from sea to sea, from St Abbs Head and the Lammermuir westward to the hills of Galloway. It concentrates in itself all that is most characteristic of that scenery—the soft green rounded hills with their flowing outlines, overlapping and melting into each other; the clear streams winding down between them from side to side, margined with green slips of holm; the steep brae-sides with the splendour of mountain grass, interlaced here and there with darker ferns or purple heather; the hundred sideburns that feed the main Dale river, coming from hidden Hopes where the grey peel-tower still moulders; the pensive aspect of the whole region so solitary and desolate. Then Yarrow is the centre of the once famous but now vanished Forest of **ETTRICK**, with its memories of proud huntings and chivalry, of glamourie and the land of Faery. Again, it is the home of some "old unhappy far-off thing," some immemorial romantic sorrow, so remote that tradition has forgotten its incidents, yet cannot forget the impression of its sadness,

Ballad after ballad comes down loaded with a dirge-like wail for some sad event, made still sadder for that it befell in Yarrow.' The oldest surviving ballad, *The Dowie Dens o' Yarrow*, is supposed to refer to a combat at Deuchar Swire, near Yarrow kirk, in which Walter Scott, third son of Robert of Thirlestane, was treacherously slain by his brother-in-law, John Scott of Tushielaw:—

'As he gaed up the Tinnies Bank,
I wot he gaed wi' sorrow,
Till, down in a den, he spied nine armed men,
On the dowie houns of Yarrow.'

'Four has he hurt, and five has slain,
On the bludie braes of Yarrow,
Till that stubborn knight came him behind,
And ran his body thorough.'

Then comes his Sarah's exquisite lament:—

'Yestreen I dreamed a dolefu' dream;
I fear there will be sorrow!
I dreamed I pu'd the heather green,
Wi' my true love on Yarrow.'

'O gentle wind that bloweth south,
From where my Love repaireth,
Convey a kiss frae his dear mouth,
And tell me how he fareth!

'Oh! tell sweet Willie to come down,
And hear the mavis singing,
And see the birds on ilka bush,
And leaves around them hinging.

'But in the glen strove armed men;
They've wrought me dule and sorrow;
They've slain—the comeliest knight they've slain:
He bleeding lies on Yarrow.'

'She kissed his cheek, she kaimed his hair,
She searched his wounds all thorough;
She kissed them, till her lips grew red,
On the dowie houns of Yarrow.'

We hear the same sad burden of a lover lost, by drowning in Yarrow or by a rival's sword, in *Willie's rare, and Willie's fair* (circa 1525; first printed 1724), in Hamilton of Bangour's *Busk ye, busk ye, my bonny, bonny bride* (1748), and in John Logan's *Braes of Yarrow* (1770). Scott himself, the 'Etrick Shepherd,' 'Christopher North,' Henry Scott Kiddell, the 'Surfaceman Poet,' and 'J. B. Selkirk,' have added each a spray to Yarrow's garland of song. See Sir Thomas Dick Lauder's *Scottish Rivers* (Edinb. 1874); Dr John Brown's *Minchmoor* (Edinb. 1864); Prof. John Veitch's *History and Poetry of the Scottish Border* (Glasg. 1878; new ed. 1892); Principal J. C. Shairp's 'Three Yarrowes' in *Aspects of Poetry* (Oxf. 1881); Rev. R. Borland's *Yarrow, its Poets and Poetry* (1890); and William Angus's *Etrick and Yarrow* (Selkirk, 1894).—*Ord. Sur.*, shs. 16, 24, 25, 1864-65.

Yell (anc. *Jailta, Jala; Icel. gellð, gall*, 'barren'), the second largest of the Shetland Islands, and, except Unst, the most northerly of the group, lies 25 to 40 miles N of Lerwick, under which it has post and telegraph offices of Ulsta (in the SW), Mid Yell (E), and Cullivoe (NE). It is separated, on the W and SW, from Mainland by Yell Sound, $\frac{1}{2}$ to 6 miles broad; on the E, from Fetlar by Colgrave Sound, $\frac{1}{2}$ to $4\frac{1}{2}$ miles broad; and on the NE, from Unst by Bluemull Sound, $4\frac{1}{2}$ furlongs broad at the narrowest. Its utmost length, from N to S, is $17\frac{1}{2}$ miles; its breadth varies between $\frac{1}{2}$ mile and $6\frac{1}{2}$ miles; and its area is 81·69 square miles or 52,923·2 acres. The tides on both sides of the island are very impetuous; and both in Yell and Bluemull Sounds, where they meet with obstructions, and often run at the rate of 9 or 10 miles, they for continuous hours defy boat navigation, and toss the sea, even during a calm, into foam and tumult. The chief bays which indent the coast are Gloup Voe on the N; Basta Voe, Mid Yell Voe, and Otters Wick on the E; Burra Voe and Hanna Voe on the S; and Whale Firth on the W. All these, and some smaller bays or creeks, form natural harbours, several of which are capacious

and sheltered. Mid Yell Voe and Whale Firth are opposite each other, a little N of the centre of the island, and leave between them only a low boggy isthmus $\frac{1}{2}$ mile across, which could be cut into a canal communication. A landing can be effected at almost any point on the E coast, but even in calm weather it can nowhere be effected on the W except in Whale Firth and one smaller creek. The coast along the E is generally low and often sandy, but along the W it is to a considerable extent rocky, bold, and even precipitous, rising rapidly in places to over 200 and 300 feet. The surface of the island presents a heavy and cheerless aspect. Two nearly parallel ridges of gneiss rocks, of almost uniform outline, and only from 200 to 600 feet in height, traverse it nearly from end to end, sloping gradually toward the shores, and in some places connected by transverse ridges running from E. to W. The northern division of the island at no point exceeds 382 feet above sea-level; but S of Whale Firth and Mid Yell Sound rise the South Ward of Reafirth (615 feet), the Kame of Sandwick (531), and the Ward of Otterswick (672). Of sixty-six little fresh-water lochs or lochlets, most of them yielding good trout-fishing, the largest are Kettlester Loch, Lambister Loch, Colvister Loch, and Gossa Water. The rocks are principally gneiss and mica slate, with veins of granite and nodules or masses of quartz and trap; and almost all the soil is a deep moss, occasionally but seldom mixed with clay or sand. Yell is described in Buchanan's History (1582) as 'so uncouth a place that no creature can live therein except such as are born there.' But now there are a number of good sheep farms, with thriving flocks of Cheviot and blackfaced sheep. Eggs, cattle, and ponies are also exported; fishing in the surrounding seas is a leading but perilous employment; and the pursuit and capture of the 'caa'in whale' (*Delphinus deductor*) occasionally produces vast excitement. The antiquities are some Picts' houses or circular burghs, and nearly a score of shapeless ruins or faint vestiges of pre-Reformation chapels. The island was anciently distributed into the three parishes of North Yell, Mid Yell, and South Yell. Subsequently North Yell was united to Fetlar, whilst Mid and South Yell formed one civil parish. In 1891, however, the Boundary Commissioners disjoined North Yell from the parish of Fetlar and North Yell, and annexed it to the parish of Mid and South Yell. Under this arrangement, and with an accompanying simplification in nomenclature, the island of Yell, with dependent islands, became the parish of Yell; and the island of Fetlar, with dependent islands, became the parish of Fetlar. Besides Yell island the parish consists of the following islands:—Gloup Holm (30·4), Linga (122·2), Hascosay (750·5), Uynarey (71), Orfarsay (37·9), and also three small islands (15·6). The island of Bigga (235·8 acres) belongs in common to the parishes of Yell and Delting. Yell is divided into the ecclesiastical parish of Mid Yell, and the *quoad sacra* parishes of North and South Yell. In the presbytery of Burravoe and the synod of Shetland, the stipend of the former is £189, of the latter £155 and £120. Mid Yell church, with 500 sittings, was built in 1832; and South Yell church, with 384, in 1841. A church hall was opened in Mid Yell parish in 1893, and a mission church at West Sandwick in 1894. The South Yell church was re-roofed, reseated, and otherwise improved in 1891. There are also a Free church of North Yell, a Free Church preaching station at West Yell, and an Episcopal mission church of Burravoe. Eight public schools—Burravoe, Cullivoe Braessie, East Yell, Gutcher, Mid Yell, Ulsta, West Sandwick, and West Yell—with total accommodation for 402 children, had (1893) an average attendance of 296, and grants amounting to £376, 4s. Valuation of island, £3138. Pop. of island (1831) 2649, (1861) 2716, (1871) 2732, (1881) 2529, (1891) 2511.

Yesterday, a parish in the S of Haddingtonshire, containing GIFFORD village, within $\frac{1}{2}$ mile of the northern boundary, and $4\frac{1}{2}$ miles SSE of Haddington, under which there is a post office of Gifford, with money order,

savings bank, and telegraph departments. It is bounded N by Haddington, NE, E, and SE by Garvald, S by Lauder and Channellkirk in Berwickshire, SW by Humber, and W and NW by Bolton. Its utmost length, from N to S, is $5\frac{1}{2}$ miles; its utmost breadth, from E to W, is $4\frac{1}{2}$ miles; and its area is 8847½ acres. The proposed Gifford and Garvald railway, deviating at Ormiston from the Macmerry branch of the North British system, will traverse the northern portion of the parish. GIFFORD WATER, entering from Garvald, winds $3\frac{1}{2}$ miles west-north-westward across the north-eastern interior and along the Haddington boundary, and receives here the tribute of Gamuelston, Newhall, and other rivulets which rise in the S of the parish. Sinking at the northern border to 345 feet above sea-level, the surface thence rises southward to 700 feet near Long-Yester, 921 near Long-Newton, and 1733 at LAMMER LAW, the loftiest of the LAMMERMUIR HILLS. The rocks of the northern district, belonging to the Carboniferous formation, include limestone and hard red sandstone, but no coal; those of the southern district are Silurian. The soil, in most parts clayey, in some parts a light loam, on the uplands is moorish, and nearly everywhere is more or less incumbent on clay. Agricultural improvements in the way of reclamation, draining, fencing, etc., have been remarkably successful. About three-fifths of the entire area are in tillage; some 940 acres are under wood, and the rest of the land is either pastoral or waste. The manor of Yester or Yestred (Cymric *yestrad*, 'strath or dale') was granted by William the Lion (1166-1214) to Hugh Gifford, whose father, an Englishman, had settled in Lothian under David I. From that early age till the present day Yester has remained with his descendants. Sir David Dalrymple relates in his Annals, that his grandson, Hugh Gifford de Yester, died in 1267, and that in Yester Castle, which stood on the eastern verge of the parish, near the left bank of Gifford Water, 'there was a spacious cavern formed by magical art, and called in the country Bo'hall, *i.e.*, Hobgoblin Hall.' This cave, which is alluded to in Canto Third of *Marmion*, is very spacious, and has an arched roof. It is reached by a descent of 24 steps; and though it has stood for so many centuries, and has been exposed to the external air for between 100 and 200 years, it is still in a state of good preservation. From the floor, another stair of 36 steps leads down to a pit, which communicates with one of the neighbouring rivulets. A great part of the walls superincumbent on the cavernous apartment are still standing. Tradition reports that the Castle of Yester was the last fortification in this country which surrendered to the English general sent into Scotland by the Protector Somerset. Another Hugh Gifford, who died before 11 March 1409, had not a son to inherit his large estates; and Johanna, the eldest of his daughters, marrying Sir William Hay of Locherwart, transferred the manor, with the patronage of the church, to him and their conjoint posterity. Thus arose the family of Yester and Locherwart, who obtained the titles of Lord Yester in 1488, Earl of Tweeddale in 1646, Marquis of Tweeddale and Earl of Gifford in 1694, and Baron Tweeddale (in the peerage of the United Kingdom) in 1881. William Montagu Hay, present and tenth Marquis (b. 1826; suc. 1878), holds extensive acres in Haddingtonshire, Berwickshire, and Roxburghshire. His seat, Yester House, stands among finely wooded grounds, near the left bank of Gifford Water, 1 mile SE of Gifford village, and is a large classical edifice, built from designs by W. Adam towards the close of the 18th century, but greatly altered and improved since then (J. Small's *Castles and Mansions of the Lothians*, 1883). Another mansion, noticed separately, is NEWTON HALL. Robert Fleming (1630-94), a much esteemed divine, and Charles Nisbet, D.D. (1736-1804), president of Dickenson College, Pennsylvania, were natives, as also were James Craig and John Witherspoon, D.D. The two last are both noticed under GIFFORD, where, too, is discussed the question of John Knox's birthplace. In the southern or Lammer-

muir portion of the parish are the sites or remains of five hill-forts, one of them at a spot called the Witches' Knowe. Yester is in the presbytery of Haddington and the synod of Lothian and Tweeddale; the living is worth £327. The church was originally called St Bothan's or Bothan's, after Baithene, Columba's cousin and successor at Iona. Afterwards known as Yester, in 1451 it was restored to its former name, and at the same time converted by Sir William Hay into a collegiate establishment for a provost, 6 prebendaries, and 2 singing-boys. The Reformation upset the collegiate establishment, and placed the church in a simply parochial position under the revived name of Yester. A chapel, dedicated to St Nicholas, and subordinate to the parish church, anciently stood at Duncanlaw. The present parish church and the new Free church are both described under Gifford. There are two public schools, one at Long-Yester, and the other, of recent erection, at Gifford. Valuation (1885) £3844, 5s., (1893) £7283, 6s. Pop. (1881) 924, (1891) 716.—*Ord. Sur.*, sh. 33, 1863.

Yetholm (12th c. *Yetham* or *Jetham*, 'hamlet at the gate or passage' between England and Scotland), a Border village and parish of NE Roxburghshire. The village, lying 378 feet above sea-level, consists of two parts—Town-Yetholm, on the left, and Kirk-Yetholm, 3 furlongs to the E, on the right bank of Bowmont Water, which here is spanned by a stone three-arch bridge, built in 1834. Town-Yetholm is $7\frac{1}{2}$ miles SE of Kelso, and Kirk-Yetholm $1\frac{1}{2}$ mile SW of the English Border; and each is a burgh of barony, the former under Wauchope of Niddrie-Marischall, and the latter under the Marquis of Tweeddale. Of Kirk-Yetholm's two sheep fairs (27 June and 17 Oct.), and Town-Yetholm's lamb fair (second Wednesday of July), only the latter retains any importance; and a weekly market, formerly held at Town-Yetholm, has long been discontinued. The football match, too, and games on Eastern E'en (Shrove Tuesday) have lost much of their ancient celebrity; and the smuggling of whisky across the Border was almost extinct so long ago as 1835. Once it engaged a fifth of the villagers, and the whisky sold from Yetholm into England had a value of from £10,000 to £20,000 a year. There are a post office under Kelso, with money order, savings bank, and telegraph departments, a water supply of 1858, a town-hall, a reading-room and library, and a horticultural society. Pop. of entire village (1881) 746, (1891) 590.

Edward I. spent two days at Yetholm in 1304 on his way back to England; and Douglas is said to have made the kirk his rendezvous before the battle of Otterburn (1388); whilst many of the Scottish nobles who fell at Flodden (1513) are believed to have been brought 6 miles for burial in the kirkyard, as the nearest consecrated ground in Scotland. A later tradition tells how in 1745 a small party of Highlanders, adherents of 'bonny Prince Charlie,' marched through the parish and village, up Bowmont Water, to Earl in Northumberland. But Kirk-Yetholm's chief interest is that from time immemorial it has been the headquarters of the Scottish Gipsies. The date of their settlement here is as hard to fix as that of the first arrival of Gipsies in Scotland. The earliest certain mention of them within the realm is an entry in the books of the Lord High Treasurer: 'Apr. 22, 1505.—Item to the Egyptianis, be the kingis command, viij lib. s.' and on 5 July of that same year James IV. gave Anthonius Gagin, Count of Little Egypt, a letter of commendation to the King of Denmark. But the 'overliers and masterful beggars,' described in an Act of 1449 as going about the country with 'horses, hundes, and other gudes,' were probably Gipsies; and we find an early tradition of Gipsies or 'Saracens' infesting Galloway prior to 1460. (See KIRK-CUDDBRIGHT.) In 1540 James V. subscribed a writ in favour of 'oure lout Johnne Faw, lord and erle of Litill Egypt; and the Faws or Faas would seem to have been the first Gipsy settlers here, some longish time before 1669, if the Falls of DUNBAR were really a branch of the Faas of Kirk-Yetholm. Jean Gordon, again, the prototype of Scott's 'Meg Merrilees,' appears to have

been a native of the place; and as she was quite an old woman when, at Carlisle, soon after the year 1746, she was ducked to death in the Eden, there must have been Gipsies in Yetholm earlier than 1695 or 1715—the dates of their first settlement, according to different authorities. Old Will Faa, the first Gipsy King that we hear of, died at Coldingham in 1783 or 1784; and 'his corpse was escorted to Yetholm by more than 300 asses.' He was succeeded by his eldest son, William; he, in 1847, by his sister's son, Charles Blythe; and he, in 1861, by his daughter, Esther Faa Blythe, who, dying at Kelso in July 1883, was buried at Yetholm in presence of a large multitude. A canny old body, but with little of the Romani in face or language, she described Kirk-Yetholm as 'sae mingle-mangle that ane might think it was either built on a dark nicht or sawn on a windy ane—the inhabitants mainly Irish, and nane o' her seed, breed, and generation.' And she was right, for to-day in the 'Gipsy toun' there are no true Gipsies.

The parish is bounded NW, for 2½ miles, by Linton; NE and E, for 6½ miles, by Northumberland; SW and W, for 5½ miles, by Morebattle. Its utmost length, from NNW to SSE, is 5½ miles; its utmost breadth, from E to W, is 3½ miles; and its area is 6036·220 acres, of which 76·678 are water and 38·101 roads. BOWMONT Water, coming in from Morebattle, flows 3 miles north-north-eastward through Yetholm parish, till, 1½ mile below the bridge, it passes into Northumberland, to fall into the Till at the field of Flodden. Yetholm or Primside Loch (3¼ × 1½ furl.; 41·786 acres) lies on the Morebattle boundary, 1 mile W of Town-Yetholm, and sends off the ditch-like Stank 1½ mile east-north-eastward to Bowmont Water, another of whose little affluents, Halter or Shotton Burn, rises in the SE extremity of the parish, and runs 4½ miles north-by-westward, for the last ¾ mile along the English Border. The Bowmont is a capital trout-stream, and Yetholm Loch contains pike and plenty of perch. Beside the Bowmont the surface declines to from 400 to 295 feet above sea-level, and thence it rises westward to 760 feet on Yetholm Law and 881 on Venchen Hill, south-eastward and eastward to 1086 on Staerough Hill, 1629 on Stearrig Knowe at the SE extremity of the parish, 1407 on While Law, and 937 on Green Humbleton. New red sandstone is the predominant rock of the lower grounds, felspar-porphry of the hills; and the latter contains nodules of agate and common jasper. Quartz and compact felspar also occur; and a fine sharp sand, suitable for the purposes of the mason, forms much of the bed of the Bowmont. The soil of the arable lands is generally good, in places of considerable depth, and largely incumbent on gravel. 'The parish of Yetholm,' says Dr Baird, 'is prettily situated at the foot of the smooth green CHEVIOTS. It comprises part of the hill-locked and lovely vale of the Bowmont, "alike inaccessible from without, and not to be left from within,"—a little sunny world of its own. In summer the Bowmont meanders quietly through its channel bed, at times and in places lost altogether among the gravel; but in the winter season, and in times of flood, it runs with a very rapid stream, and occasionally bursts its barriers and overflows the whole haugh, carrying everything before it. Yetholm in many respects was long neglected. It possesses natural beauties of its own; but little had been done by the proprietors, most of whom were non-resident, to improve the appearance of their estates. The farms were well cultivated; but the hills were bare of wood, and no attempts had been made to diversify the

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scenery or improve the ground by ornamental plantation. About 1830, however, better taste began to be shown. Mr Wauchope commenced planting trees on the hill-sides on his property; the Marquis of Tweeddale was not altogether wanting on his part; while the gardens and plantations about Cherrytrees showed that that estate had fallen into the hands of a man of good taste and skill in ornamental landscape gardening. A casual visitor to Yetholm at the present day cannot fail to observe that there are few parishes in the S of Scotland superior to it in richness of cultivation and taste in planting, as well as in sweetness of scenery and freshness and invigorating healthfulness of air.' There are remains of three or four ancient hill-forts; but Thirl-stane Tower has been many years pulled down. Its 'warlock's room' was probably the laboratory of Dr Scott, a chemist of some celebrity, and physician to Charles II. Cherrytrees, 1½ mile NW of the village, is the seat of John Brack Boyd, Esq. (b. 1818; suc. 1862). The other proprietors are Wauchope of Niddrie-Marischall, the Marquis of Tweeddale, Rea of Halterburnhead, etc. Yetholm is in the presbytery of Kelso and the synod of Merse and Teviotdale; the living is worth £325. The parish church was built in 1836 on the site of its long, low, reed-thatched predecessor. It is a plain structure of dark-coloured stone, with 700 sittings and a square tower. At Town-Yetholm are a U.P. church (450 sittings) and a handsome Gothic Free church (1882). The public school (1833), with accommodation for 201 children, had in 1893 an average attendance of 174, and a grant of £175, 12s. 6d. Pop. (1881) 1045, (1891) 884.—*Ord. Sur.*, shs. 26, 18, 1864-63.

See Dr W. Baird's *Memoir of the late Rev. Jn. Baird, Minister of Yetholm from 1829 to 1861* (Lond. 1862); the Rev. J. Baird's *Scottish Gipsies' Advocate* (Edinb. 1839); W. Simson's *History of the Gipsies* (New York, 1865; 2d ed. 1878); R. Murray's *Gipsies of the Border* (Galashiels, 1875); G. Borrow's *Romano Lavo Lil* (Lond. 1874); C. G. Leland's *English Gipsies and their Language* (Lond. 1874); J. Lucas' *Yetholm Gipsies* (Kelso, 1882); Dr C. Stuart's *David Blythe* (Kelso, 1883); D. MacRitchie's *Ancient and Modern Britons* (Lond. 1884); and W. Brockie's *Gipsies of Yetholm* (Kelso, 1884).

Yieldshields. See ROADMEETINGS.

Yoker. See CLYDEBANK.

Yoolfield, a village in Kemback parish, Fife, 3 miles E by N of Cupar.

Ythan, a smooth, slow river of Aberdeenshire, rising at the Wells of Ythan, 768 feet above sea-level, and winding 35½ miles east-south-eastward, through or along the borders of Forgue, Auchterless, Fyvie, Methlick, Tarves, Ellon, Logie-Buchan, Slains, and Foveran parishes, till it falls into the German Ocean near the seaport village of Newburgh. It is a capital stream for salmon, sea-trout, and yellow trout; and pearl-mussels are still found in it when the water is low. The great pearl in the crown of Scotland is said to have been found here; and about 1750 a Mr Tower, an Aberdeen merchant, got £100 sterling from a London jeweller for a lot of pearls from the Ythan. The price he had named was only £100 Scots, or £8, 6s. 8d.—*Ord. Sur.*, shs. 86, 87, 77, 1876-73.

Ythan Wells, a *quoad sacra* parish in Forgue and Auchterless parishes, Aberdeenshire, whose church stands 9 miles E by S of Huntly. Pop. (1881) 1315, (1891) 1136.—*Ord. Sur.*, sh. 86, 1876.

Zetland. See SHETLAND and KERSE HOUSE.

GENERAL SURVEY.

A SURVEY of Scotland appended to a copious gazetteer must of necessity be very general. Every natural, administrative, and ecclesiastical division of the country, every striking feature of its physical structure, each great cluster of islands, every range of heights and remarkable mountain or hill, each lake and river and arm of the sea, every city, town, village, hamlet, and conspicuous mansion, every point of interest, be it what it may—a ruined castle or abbey, a prehistoric antiquity, a monument or a battlefield—has been so fully noticed in its alphabetical place or under some heading that naturally suggests itself, that a summary like the present has little scope for description, and need not even be studded with references. Yet such a rapid sketch as shall indicate the mutual relations of the parts, some facts which refer strictly to the country as a whole, and a few particulars which, while referring only to certain localities, or to classes of objects, could not, without frequent repetition, be inserted in the body of the work, will, it is believed, prove acceptable and serviceable to the reader.

POSITION, BOUNDARIES, EXTENT, AND AREA.

By H. A. WEBSTER, sometime Honorary Editor of the *Scottish Geographical Magazine*.

SCOTLAND is the northern part of the island of Great Britain, which was, at no distant geological date, a north-westward prolongation of the continent of Europe, but is now separated from it southward by the English Channel (from 22 to 150 miles broad and not 50 fathoms deep), and eastward by the comparatively shallow basin of the North Sea or German Ocean. The country is consequently bounded on all sides except one by the sea; and on the south side, owing to the inward sweep of the Solway Firth, it is connected with England by an isthmus only 60 miles across. There is, however, no natural break or limit, and the political boundary follows so capricious and irregular a line, there would be nothing surprising if more than one place could claim to be the prototype of that Evan Cottage in England with its garden in Scotland which plays so important a part in Mr Gilbert's *Engaged*. To cross the border without knowing it is as easy as to cross the imaginary line drawn round the globe and termed the equator. Popular language is quite at fault in using 'north of the Tweed' as a synonym for Scotland. The liberties of Berwick, which since 1482 have been attached to, though not fully incorporated with, England, cut away a very considerable cantle of the country on that side of the river; and the town of Berwick, it may be added parenthetically, is consequently not the county town of Berwickshire. We have to ascend the Tweed for about 5 miles before we reach the spot, a little above Gainslaw, where it begins to form the limit between the two kingdoms. The line thence continues upwards along the main channel, leaving a river-island now to Scotland and now to England, and in the neighbourhood of Coldstream deflecting for half a mile to seize for Scotland a little strip of southern soil. From about 2° 19' 40' West longitude it abruptly strikes south-east from the Tweed (whose course has hitherto been carrying it south-west), and holds on quite regardless of physical features, and with frequent bendings and indentings, till it reaches its eastmost point at Auchopecairn (2422 feet) in 2° 9' 40' West longitude, and as abruptly resumes a south-west direction. For upwards of 25 miles the water-parting and the political boundary

generally coincide more or less completely, and we advance along the Cheviots from summit to summit—King's Seat, Windy Gate Hill, Beefstand Hill, Lamb Hill, Hungry Law, Leap Hill, etc. The boundary again becomes quite erratic in its course, till, meeting the Kershope Burn, it follows that for 8½ miles to its junction with Liddel Water. Instead of keeping by the Esk, into which the Liddel Water flows, it strikes almost due west to the river Sark, and with it returns to the channel of the Esk in the upper reaches of the Solway Firth. In consequence of the irregularities thus rapidly indicated, Scotland marches with England along a line of no less than 100 miles.

It would probably now be quite impossible to discover in detail the historical reason for each peculiarity of this line. The southern frontier of Scotland was substantially what it now is—the Solway, the Cheviots, and the Tweed—as early as the death of Malcolm Ceanmor. In the reign of Alexander II. an attempt was made to fix the exact line of demarcation by a perambulation of the eastern marches by English and Scottish knights. These commissioners failed to come to terms, but the task was partly accomplished by their successors in 1246, and the Laws of the Marches, settled in 1249 by twelve English and Scottish knights respectively, with the Sheriff of Northumberland and the Sheriff of Berwick, assume the line of the border to be fixed, though they only incidentally refer to one or two points of it. In subsequent legislation, and notably in the treaty of Northampton, which, in 1325, closed the War of Independence, the demarcation as it existed in the reign of Alexander III. is accepted as authoritative.

All Scotland lies to the west of the prime meridian of Greenwich, which, indeed, runs through the North Sea at a distance of from 70 to 160 miles from the Scottish coast. As the east and west relation which this implies between the towns of Scotland and those of England is not so clearly present to popular apprehension as the north and south relation which the general direction of the main lines of traffic helps to emphasise, it may be well to give the longitudes from Greenwich of some of the more important places in

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Scotland, along with the English towns which most nearly agree with them in this respect.

Portree,	6° 10' W.	This meridian striking south through Dublin Bay is alto- gether west of England.	
Oban,	5° 28'	Penzance,	5° 32'
Inveraray,	5° 5'	Penrhy,	5° 6'
Greenock,	4° 45'	Bodmin,	4° 42'
Ayr,	4° 38'	Cardigan,	4° 37'
Kilmarnock,	4° 30'	Lanncoston,	4° 21'
Glasgow,	4° 15'	Caermarthen, Eddystone Lighthouse,	4° 17'
Inverness,	4° 18'	Menai Bridge,	4° 12'
Kirkcudbright,	4° 4'	Bangor,	4° 6'
Stirling,	3° 55'	Swansea,	3° 54'
Linlithgow,	3° 36'	Whitehaven,	3° 37'
Elgin,	3° 18'	Merthyr Tydvil,	3° 20'
Edinburgh,	3° 15'	Sidmouth,	3° 18'
Wick (East Coast),	3° 4'	Liverpool (West Coast),	2° 59'
Dundee,	2° 58'	Newport (Monmouth- shire),	2° 59'
Selkirk,	2° 50'	Axbridge,	2° 49'
St Andrews,	2° 48'	Shrewsbury,	2° 44'
Arbroath,	2° 32'	Bristol,	2° 34'
Dunbar,	2° 31'	Sherbourne,	2° 31'
Montrose,	2° 26'	Dorchester,	2° 26'
Stonehaven,	2° 13'	Worcester,	2° 13'
Aberdeen,	2° 6'	Malmesbury,	2° 6'
[Berwick],	2° 0'	Cheltenham,	2° 3'
Peterhead,	1° 47'	Salisbury,	1° 47'

Broadly stated, the result of this comparison is, that the east of Scotland is as far west as the west of England, and from this it follows, even if no allowance be made for the narrowing of the inter-meridian spaces as we advance northwards, that the west of Scotland is considerably nearer than the west of England to the coast of America. The advantage of such a position is partly counterbalanced through the fact that the portion of America which lies due west is the

inhospitable coast of Labrador. As regards the relation of the east of Scotland to the European continent it is enough to note that a ship sailing due east from Lerwick would reach the Norwegian coast near Bergen, that from the Moray Firth it would make the Skager Rack or mouth of the Baltic, and that from Aberdeen or any of the more southern ports it would strike the coasts of Denmark.

The greatest length of the mainland of Scotland, in a line nearly due north and south from the Mull of Galloway to Cape Wrath, is 274 miles. The greatest length in any possible direction is 280 miles from the Mull of Galloway to Dunnet Head. The breadth varies greatly: from St Abbs Head in Berwickshire to the Point of Knapp in Argyllshire, 139 miles; from the mouth of the South Esk in Forfarshire to Ardnarmurchan Point in Argyllshire, 144 miles; and from Buchan Ness in Aberdeenshire to the extremity of Applecross in Ross and Cromarty, 146 miles. North of the Moray Firth the greatest breadth, from Duncansbay Head to Cape Wrath, is only 70 miles; and the least, from Dornoch Firth to Loch Broom, is 24. The whole country is so penetrated by inlets of the sea that few points are more than 40 miles inland. From Grangemouth on the Firth of Forth to Glasgow on the Clyde the air line is not quite 25 miles.

According to the final results of the Ordnance Survey the total area of Scotland is 19,777,490 statute acres or 30,902·32 square miles, of which 19,063,231 acres or 29,786·29 square miles are land, 403,840 acres or 631 square miles are water, and 310,413 acres or 485·01 square miles are foreshore. Looking back it is curious to observe the several approximations made from time to time. While Major Dawson in 1851 estimated the total area at 20,047,462 acres, the Registrars in 1855 allowed no more than 19,656,315 acres, of which 17,199,081 were on the mainland and 2,457,234 on 386 islands (155 inhabited).

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By JAMES GEIKIE, D.C.L., LL.D., F.R.S., Professor of Geology in the University of Edinburgh.

SCOTLAND, like 'all Gaul,' is divided into three parts—namely, the Highlands, the Central Lowlands, and the Southern Uplands. These, as a correctly drawn map will show, are natural divisions, for they are in accordance not only with the actual configuration of the surface, but with the geological structure of the country. The boundaries of these principal districts are well defined. Thus an approximately straight or gently undulating line taken from Stonehaven, in a south-west direction, along the northern outskirts of Strathmore to Glen Arney, and thence through the lower reaches of Loch Lomond to the Firth of Clyde at Kilcreggan, marks out with precision the southern limits of the Highland area and the northern boundary of the Central Lowlands. The line that separates the Central Lowlands from the Southern Uplands is hardly so prominently marked throughout its entire course, but it follows precisely the same north-east and south-west trend, and may be traced from Dunbar along the base of the Lammermuir and Moorfoot Hills, the Lowthers, and the hills of Galloway and Carrick to Girvan. In each of the two mountain tracts—the Highlands and Southern Uplands—areas of low-lying land occur, while in the intermediate Central Lowlands

isolated prominences and certain well-defined belts of hilly ground make their appearance. The statement, so frequently repeated in class-books and manuals of geography, that the mountains of Scotland consist of three (some writers say five) 'ranges,' is erroneous and misleading. Properly speaking, there is not a true mountain-range in the country. If we take this term, which has been very loosely used, to signify a linear belt of mountains—that is, an elevated ridge notched by cols or 'passes' and traversed by transverse valleys—then in place of 'three' or 'five' such ranges we might just as well enumerate fifty or sixty, or more, in the Highlands and Southern Uplands. Or, should any number of such dominant ridges be included under the term 'mountain-range,' there seems no reason why all the mountains of the country should not be massed under one head and styled the 'Scottish Range.' When the geologist sees such a motley assemblage of heights as Goat Fell, the Lowthers, the Cheviots, the Pentlands, and the Lammermuirs grouped together as a 'range,' as they are in some school-books, he may be excused for protesting warmly against such a preposterous travesty of nature. A mountain-range, properly so called, is a belt of high ground which has

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been ridged up by earth-movements. It is a fold, pucker, or wrinkle in the earth's crust, and its general external form coincides more or less closely with the structure or arrangement of the rock-masses of which it is composed. A mountain-range of this characteristic type, however, seldom occurs singly, but is usually associated with other parallel ranges of the same kind—the whole forming together what is called a 'mountain-chain,' of which the Alps may be taken as an example. That chain consists of a vast succession of various kinds of rocks which at one time were disposed in horizontal layers or strata. But during subsequent earth-movements those horizontal beds were compressed laterally, squeezed, crumpled, contorted, and thrown, as it were, into gigantic undulations and sharper folds and plications. And notwithstanding the enormous erosion or denudation to which the long parallel ridges or ranges have been subjected, we can yet see that the general contour of these corresponds in large measure to the plications or foldings of the strata. The long parallel ranges and intermediate hollows of the Jura, for example, are formed by undulations of the folded strata—the tops of the long hills coinciding more or less closely with the arches, and the intervening hollows with the troughs. Now folded, crumpled, and contorted rock-masses are common enough in the mountainous parts of Scotland, but the configuration of the surface rarely or never coincides with the inclination of the underlying strata. The mountain crests, so far from being formed by the tops of great folds of the strata, very often show precisely the opposite kind of structure. In other words, the rocks, instead of being inclined away from the hill-tops like the roof of a house from its central ridge, frequently dip into the mountains.

There is yet another feature which brings out clearly the fact that the slopes of the surface have not been determined by the inclination of the strata. The main water-parting that separates the drainage-system of the west from that of the east of Scotland does not coincide with any axis of elevation. It is not formed by an anticlinal fold or 'saddleback.' In point of fact, it traverses the strata at all angles to their inclination. But this would not have been the case had the Scottish mountains consisted of a chain of true mountain-ranges. Our mountains, therefore, are merely monuments of denudation; they are the relics of elevated plateaux which have been deeply furrowed and trenched by running water and other agents of erosion. A short sketch of the leading features presented by the three divisions of the country will serve to make this plain.

The Highlands.—The southern boundary of this, the most extensive of the three divisions, has already been defined. The straightness of that boundary is due to the fact that it coincides with a great line of fracture of the earth's crust, on the north or Highland side of which occur slates, schists, and various other hard and tough rocks, while on the south side the prevailing strata are sandstones, etc., which are not of so durable a character. The latter, in consequence of the comparative ease with which they yield to the attacks of the eroding agents—rain and rivers, frost and ice—have been worn away to a greater extent than the former, and hence the Highlands, along their southern margin, abut more or less abruptly upon the Lowlands. Looking across Strathmore from the Sidlaws or the Ochils, the mountains seem to spring suddenly from the low grounds at their base, and to extend north-east and south-west, as a great wall-like rampart. The whole area north and west of this line may be said to be mountainous, its average elevation being probably not less than 1500 feet above the sea.

A glance at the accompanying orographical map of Scotland, reduced by Mr Bartholomew from the contoured sheets of the Ordnance Survey, and therefore affording a correct view of the physical relief of the country, will show better than any verbal description the manner in which our Highland mountains are grouped. It will be at once seen that to apply the term 'range' to any particular area of those high grounds is simply a misuse of terms. Not only are the mountains not formed by plications and folds, but they do not even trend in linear directions. It is true that a well-trained eye can detect certain differences in the form and often in the colouring of the mountains when these are traversed from south-east to north-west. Such differences correspond to changes in the composition and structure of the rock-masses, which are disposed or arranged in a series of broad belts and narrower bands, running from south-west to north-east across the whole breadth of the Highlands. Each particular kind of rock gives rise to a special configuration or to certain characteristic features. Thus the mountains that occur within a belt of slate often show a sharply cut outline, with more or less pointed peaks and somewhat serrated ridges: the Aberuchill Hills, near Comrie, are an example. In the regions of gneiss and granite the mountains are usually rounded and lumpy in form. Among the schists, again, the outlines are generally more angular. Quartz rock often shows peaked and jagged outlines; while each variety of rock has its own particular colour; and this in certain states of the atmosphere is very marked. The mode in which the various rocks yield to the 'weather'—the forms of their cliffs and corries—these and many other features strike a geologist at once; and therefore, if we are to subdivide the Highland mountains into 'ranges,' a geological classification seems the only natural arrangement that can be followed. Unfortunately, however, our geological lines, separating one belt or 'range' from another, often run across the very heart of great mountain masses. Our 'ranges' are distinguished from each other simply by superficial differences of feature and structure. No long parallel hollows separate a 'range' of schist mountains from the succeeding 'ranges' of quartz rock, gneiss, or granite. And no degree of careful contouring could succeed in expressing the niceties of configuration just referred to, unless the maps were on a very large scale indeed. A geological classification or grouping of the mountains into linear belts cannot, therefore, be shown upon any ordinary orographical map. Such a map can present only the relative heights and disposition of the mountain masses, and these last, in the case of the Highlands, as we have seen, cannot be called 'ranges' without straining the use of that term. Any wide tract of the Highlands, when viewed from a commanding position, looks like a tumbled ocean in which the waves appear to be moving in all directions. One is also impressed with the fact that the undulations of the surface, however interrupted they may be, are broad—the mountains, however they may vary in detail according to the character of the rocks, are massive, generally round-shouldered, and often somewhat flat-topped, while there is no great disparity of height among the dominant points of any individual group. Let us take, for example, the knot of mountains between Loch Maree and Loch Torridon. There we have a cluster of eight pyramidal mountain masses, the summits of which do not differ much in elevation. Thus, in Liathach, two points reach 3358 and 3486 feet; in Beinn Alligin there are also two points reaching 3021 and 3232 feet respectively; in Beinn Dearg we have a height of 2995 feet; in Beinn Eighe are three dominant points—3188, 3217,

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and 3309 feet. The four pyramids to the north are somewhat lower—their elevations being 2860, 2801, 2370, and 2892 feet. The mountains of Lochaber and the Monadhliath Mountains exhibit similar relationships; and the same holds good with all the mountain masses of the Highlands. No geologist can doubt that such relationship is the result of denudation. The mountains are monuments of erosion—they are the wreck of an old table-land, the upper surface and original inclination of which are approximately indicated by the summits of the various mountain masses and the directions of the principal water-flows. If we, in imagination, fill up the valleys with the rock material which formerly occupied their place, we shall, in some measure, restore the general aspect of the Highland area before its mountains began to be shaped out by Nature's saws and chisels.

It will be observed that while streams descend from the various mountains to every point of the compass, their courses having often been determined by geological structure, etc., their waters yet tend eventually to collect and flow as large rivers in certain definite directions. These larger rivers flow in the direction of the average slope of the ancient table-land, while the main water-partings that separate the more extensive drainage-areas of the country mark out, in like manner, the dominant portions of the same old land-surface. The water-parting of the North-West Highlands runs nearly north and south, keeping quite close to the western shore, so that nearly all the drainage of that region flows inland. The general inclination of the North-West Highlands is therefore easterly towards Glenmore and the Moray Firth. In the region lying east of Glenmore the average slopes of the land are indicated by the directions of the rivers Spey, Don, and Tay. These two regions—the North-West and South-East Highlands—are clearly separated by the remarkable depression of Glenmore, which extends through Loch Linnhe, Loch Lochy, and Loch Ness, and the further extension of which towards the north-east is indicated by the straight coast-line of the Moray Firth as far as Tarbat Ness. Now this long depression marks a line of fracture and displacement of very great geological antiquity. The old plateau of the Highlands was fissured and split in two—that portion which lay to the north-west sinking along the line of fissure to a great but at present unascertained depth. Thus the waters that flowed down the slopes of the north-west portion of the broken plateau were dammed by the long wall of rock on the 'up-cast' or south-east side of the fissure, and compelled to flow off to north-east and south-west along the line of breakage. The erosion thus induced sufficed in the course of time to hollow out Glenmore and all the mountain valleys that open upon it from the west.

The inclination of that portion of the fissured plateau which lay to the south-east is indicated, as already remarked, by the trend of the principal rivers. It was north-east in the Spey district, nearly due east in the area drained by the Don, east and south-east in that traversed by the Tay and its affluents, westerly and south-westerly in the district lying east of Loch Linnhe.* Thus a line drawn from Ben Nevis through the Cairngorm and Ben Muich Dhui Mountains to Kinnaird Point passes through the highest land in the South-East Highlands, and probably indicates approximately the dominant portion of the ancient plateau. North of that line the drainage is towards the Moray

Firth; east of it the rivers discharge to the North Sea; while an irregular winding line, drawn from Ben Nevis eastward through the Moor of Rannoch and southward to Ben Lomond, forms the water-parting between the North Sea and Atlantic, and doubtless marks another dominant area of the old table-land.

That the valleys which discharge their water-flow north and east to the Moray Firth and the North Sea have been excavated by rivers and the allied agents of erosion, is sufficiently evident. All the larger rivers of that wide region are typical. They show the orthodox three courses—namely, a torrential or mountain track, a middle or valley track, and a lower or plain track. The same is the case with some of the rivers that flow east from the great north and south water-parting of the North-West Highlands, as, for example, those that enter the heads of Beaulieu Firth, Cromarty Firth, and Dornoch Firth. Those, however, which descend to Loch Lochy and Loch Linnhe, and the sea-lochs of Argyllshire, have no lower or plain track. When we cross the north and south water-parting of the North-West Highlands, we find that many of the streams are destitute of even a middle or valley track. The majority are mere mountain torrents when they reach the sea. Again, on the eastern watershed of the same region a large number of the valleys contain lakes in their upper and middle reaches, and this is the case also with not a few of the valleys that open upon the Atlantic. More frequently, however, the waters flowing west pass through no lakes, but enter the sea at the heads of long sea-lochs or fiords. This striking contrast between the east and west is not due to any difference in the origin of the valleys. The western valleys are as much the result of erosion as those of the east. The present contrast, in fact, is more apparent than real, and arises from the fact that the land area on the Atlantic side has been greatly reduced in extent by subsidence. The western fiords are merely submerged land-valleys. Formerly the Inner and Outer Hebrides were united to themselves and the mainland, the country of which they formed a part stretching west into the Atlantic, as far probably as the present 100-fathoms line. Were that drowned land to be re-elevated, each of the great sea-lochs would appear as a deep mountain valley containing one or more lake basins of precisely the same character as those that occur in so many valleys on the eastern watershed. Thus we must consider all the islands lying off the west coast of the Highlands, including the major portions of Arran and Bute, as forming part and parcel of the Highland division of Scotland. The presence of the sea is a mere accident; the old lands now submerged were above its level during a very recent geological period—a period well within the lifetime of the existing fauna and flora.

The old table-land, of which the Highlands and Islands are the denuded and unsubmerged relics, is of vast geological antiquity. It was certainly in existence, and had even undergone very considerable erosion, before the Old Red Sandstone period, as is proved by the fact that large tracts of the Old Red Sandstone formation are found occupying hollows in its surface. Glenmore had already been excavated when the conglomerates of the Old Red Sandstone began to be laid down. Some of the low-lying maritime tracts of the Highland area in Caithness, and the borders of the Moray Firth, are covered with the sandstones of that age; and there is evidence to show that these strata formerly extended over wide regions, from which they have since been removed by erosion. The fact that the Old Red Sandstone deposits still occupy such extensive areas in the north-east of the mainland, and in Orkney, shows that the old table-land shelved away

* The geological reader hardly requires to be reminded that many of the minor streams would have their courses determined, or greatly modified, by the geological structure of the ground. Thus such streams often flow along the 'strike' and other 'lines of weakness,' and similar causes, doubtless, influenced the main rivers during the gradual excavation of their valleys.

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gradually to north and east, and the same conclusion may be drawn, as we have seen, from the direction followed by the main lines of the existing drainage-system. We see, in short, in the table-land of the Highlands one of the oldest elevated regions of Europe—a region which has been again and again submerged either in whole or in part, and covered with the deposits of ancient seas and lakes, only to be re-elevated, time after time, and thus to have those deposits in large measure swept away from its surface by the long-continued action of running-water and other agents of denudation.

The Central Lowlands.—The belt of low-lying ground that separates the Highlands from the Southern Uplands is, as we have seen, very well defined. In many places the Uplands rise along its southern margin as abruptly as the Highlands in the north. The southern margin coincides, in fact, for a considerable distance (from Girvan to the base of the Moorfoots) with a great fracture that runs in the same direction as the bounding fracture or fault of the Highlands. The Central Lowlands may be described, in a word, as a broad depression between two table-lands. A glance at the map will show that the principal features of the Lowlands have a north-easterly trend—the same trend, in fact, as the bounding lines of the division. To this arrangement there are some exceptions, the principal being the belt of hilly ground that extends from the neighbourhood of Paisley south-east through the borders of Renfrewshire and Ayrshire, to the vicinity of Muirkirk. The major part of the Lowlands is under 500 feet in height, but some considerable portions exceed an elevation of 1000 feet, while here and there the hills approach a height of 2000 feet—the two highest points (2352 and 2335 feet) being attained in Ben Cleugh, one of the Ochils, and in Tinto. Probably the average elevation of the Lowland division does not exceed 350 or 400 feet. Speaking generally, the belts of hilly ground, and the more or less isolated prominences, are formed of more durable rocks than are met with in the adjacent lower-lying tracts. Thus the Sidlaws, the Ochil Hills, and the heights in Renfrewshire and Ayrshire, are composed chiefly of more or less hard and tough volcanic rocks; and when sandstones enter into the formation of a line of hills, as in the Sidlaws, they generally owe their preservation to the presence of the volcanic rocks with which they are associated. This is well illustrated by the Lomond Hills in Fifeshire, the basal and larger portion of which consists chiefly of somewhat soft sandstones, which have been protected from erosion by an overlying sheet of hard basalt-rock. All the isolated hills in the basin of the Forth are formed of knobs, bosses, and sheets of various kinds of igneous rock, which are more durable than the sandstones, shales, and other sedimentary strata by which they are surrounded. Hence it is very evident that the configuration of the Lowland tracts of Central Scotland is due to denudation. The softer and more readily disintegrated rocks have been worn away to a greater extent than the harder and less yielding masses.

Only in a few cases do the slopes of the hill-belts coincide with folds of the strata. Thus, the northern flanks of the Sidlaws and the Ochils slope towards the north-west, and this also is the general inclination of the old lavas and other rocks of which those hills are composed. The southern flanks of the same hill-belt slope in Fifeshire towards the south-east—this being also the dip or inclination of the rocks. The crest of the Ochils coincides, therefore, more or less closely, with an anticlinal arch or fold of the strata. But when we follow the axis of this arch towards the north-east into the Sidlaws, we find it broken through by

the Tay valley—the axial line running down through the Carse of Gowrie to the north of Dundee. From the fact that many similar anticlinal axes occur throughout the Lowlands which yet give rise to no corresponding features at the surface, we may conclude that the partial preservation of the anticline of the Ochils and Sidlaws is simply owing to the greater durability of the materials of which those hills consist. Had the arch been composed of sandstones and shales it would most probably have given rise to no such prominent features as are now visible.

Another hilly belt, which at first sight appears to correspond roughly to an anticlinal axis, is that broad tract of igneous rocks which separates the Kilmarnock coal-field from the coal-fields of the Clyde basin. But although the old lavas of that hilly tract slope north-east and south-west, with the same general inclination as the surface, yet examination shows that the hills do not form a true anticline. They are built up of a great variety of ancient lavas and tufts or 'ashes,' which are inclined in many different directions. In short, we have in those hills the degraded and sorely denuded fragments of an ancient volcanic bank formed by eruptions that began upon the bottom of a shallow sea in early Carboniferous times, and subsequently became sub-aerial. And there is evidence to show that after the eruptions ceased the volcanic bank was slowly submerged, and eventually buried underneath the accumulating sediments of later Carboniferous times. The exposure of the ancient volcanic bank at the surface has been accomplished by the denudation of the stratified masses which formerly covered it, and its existence as a dominant elevation at the present day is solely due to the fact that it is built up of more persistent materials than occur in the adjacent low-lying areas. The Ochils and the Sidlaws are of greater antiquity, but have a somewhat similar history. Into this, however, it is not necessary to go.

The principal hills of the Lowlands form two interrupted belts, extending north-east and south-west, one of them, which we may call the Northern Heights, facing the Highlands, and the other, which may in like manner be termed the Southern Heights, flanking the great Uplands of the south. The former of these two belts is represented by the Garvock Hills, lying between Stonehaven and the valley of the North Esk; the Sidlaws, extending from the neighbourhood of Montrose to the valley of the Tay at Perth; the Ochil Hills, stretching along the south side of the Firth of Tay to the valley of the Forth at Bridge of Allan; the Lennox Hills, ranging from the neighbourhood of Stirling to Dumbarton; the Kilbarchan Hills, lying between Greenock and Ardrossan, the Cumbrae Islands and the southern half of Arran; and the same line of heights reappears in the south end of Kintyre. A well-marked hollow, trough, or undulating plain of variable width, separates these Northern Heights from the Highlands, and may be followed all the way from near Stonehaven, through Strathmore, to Crieff and Auchterarder. Between the valleys of the Earn and Teith this plain attains an abnormal height (the Braes of Doune); but from the Teith, south-west by Flanders Moss and the lower end of Loch Lomond to the Clyde at Helensburgh, it resumes its characteristic features. It will be observed also that a hollow separates the southern portion of Arran from the much loftier northern or Highland area. The Braes of Doune, extending from Glen Artney south-east to Strath Allan, although abutting upon the Highlands, is clearly marked off from that great division by geological composition and structure, by elevation and configuration. It is simply a less deeply eroded portion of the long trough or hollow.

Passing now to the Southern Heights of the Lowlands, we find that these form a still more interrupted belt than the Northern Heights, and that they are less clearly separated by an intermediate depression from the great Uplands which they flank. They begin in the north-east with the isolated Garleton Hills, between which and the Lammermuirs a narrow low-lying trough or hollow appears. A considerable width of low ground now intervenes before we reach the Pentland Hills, which are in like manner separated from the Southern Uplands by a broad low-lying tract. At their southern extremity, however, the Pentlands merge more or less gradually into a somewhat broken and interrupted group of hills which abut abruptly on the Southern Uplands, in the same manner as the Braes of Doune abut upon the slate hills of the Highland borders. In this region the greatest heights reached are in Tinto (2335 feet) and Cairntable (1844), and, at the same time, the hills broaden out towards the north-west, where they are continued by the belt of volcanic rocks already described as extending between the coal-fields of the Clyde and Kilmarnock. Although the Southern Heights abut so closely upon the Uplands lying to the south, there is no difficulty in drawing a firm line of demarcation between the two areas—geologically and physically they are readily distinguished. No one with any eye for form, no matter how ignorant he may be of geology, can fail to see how strongly contrasted are such hills as Tinto and Cairntable with those of the Uplands which they face. The Southern Heights are again interrupted towards the south-east by the valleys of the Ayr and Doon, but they reappear in the hills that extend from the Heads of Ayr to the valley of the Girvan.

Between the Northern and Southern Heights spread the broad Lowland tracts that drain towards the Forth, together with the lower reaches of the Clyde valley, and the wide moors that form the water-parting between that river and the estuary of the Forth. The hills that occur within this inner region of the Central Lowlands are usually more or less isolated, and are invariably formed by outcrops of igneous rock. Their outline and general aspect vary according to the geological character of the rocks of which the hills are composed—some forming more or less prominent escarpments like those of the Bathgate Hills and the hills behind Burntisland and Kinghorn, others showing a soft rounded contour like the Saline Hills in the west of Fifeshire. Of the same general character as this inner Lowland region is the similar tract watered by the Irvine, the Ayr, and the Doon. This tract, as we have seen, is separated from the larger inner region lying to the east by the volcanic hills that extend from the Southern Heights north-west into Renfrewshire.

The largest rivers that intersect the Central Lowlands take their rise, as might be expected, in the mountainous table-lands to the north and south. Of these the principal are the North and South Esks, the Tay and the Isla, the Earn and the Forth, all of which, with numerous tributaries, descend from the Highlands. And it will be observed that they have breached the line of the Northern Heights in three places—namely, in the neighbourhood of Montrose, Perth, and Stirling. The only streams of any importance coming north from the Southern Uplands are the Clyde and Doon, both of which in like manner have broken through the Southern Heights. Now, just as the main water-flows of the Highlands indicate the average slope of the ancient land-surface before it was trenched and furrowed by the innumerable valleys that now intersect it, so the direction followed by the greater rivers that traverse the Lowlands marks out the primeval slopes of that area. One sees at a glance, then, that the

present configuration of this latter division has been brought about by the erosive action of the principal rivers and their countless affluents, aided by the sub-aerial agents generally—rain, frost, ice, etc. The hills rise above the average level of the ground, not because they have been ridged up from below, but simply owing to the more durable nature of their component rocks. That the Northern and Southern Heights are breached only shows that the low grounds now separating those heights from the adjacent Highlands and Southern Uplands formerly stood at a higher level, and so allowed the rivers to make their way more or less directly to the sea. Thus, for example, the long trough of Strathmore has been excavated out of sandstones, the upper surface of which once reached a much greater height, and sloped outwards from the Highlands across what is now the ridge of the Sidlaw Hills. Here, then, in the Central Lowlands, as in the Highlands, true mountain or hill-ranges are absent. But if we are permitted to term any well-marked line or belt of high ground a 'range,' then the Northern and Southern Heights of the Lowlands are better entitled to be so designated than any series of mountains in the Highlands.

The Southern Uplands.—The northern margin of this wide division having already been defined, we may now proceed to examine the distribution of its mountain masses. Before doing so, however, it may be as well to point out that considerable tracts in Tweeddale, Teviotdale, and Liddesdale, together with the Cheviot Hills, do not properly belong to the Southern Uplands. In fact, the Cheviots bear the same relation to those Uplands as the Northern Heights do to the Highlands. Like them they are separated by a broad hollow from the Uplands, which they face—a hollow that reaches its greatest extent in Tweeddale, and rapidly wedges out to the south-west, where the Cheviots abut abruptly upon the Uplands. Even where this abrupt contact takes place, however, the different configuration of the two regions would enable any geologist to separate the one set of mountains from the other. But for geographical purposes we may conveniently disregard these geological contrasts, and include within the Southern Uplands all the area lying between the Central Lowlands and the English Border.

If there are no mountains in the Highlands so grouped and arranged as to be properly termed 'ranges,' this is not less true of the Southern Uplands. Perhaps it is the appearance which those Uplands present when viewed from the Central Lowlands that first suggested the notion that they were ranges. They seem to rise like a wall out of the low grounds at their base, and extend far as eye can reach in an approximately straight line. It seems more probable, however, that our earlier cartographers merely meant, by their conventional hill-shading, to mark out definitely the water-partings. But to do so in this manner now, when the large contour maps of the Ordnance Survey may be in any one's hands, is inexcusable. A study of those maps, or, better still, a visit to the tops of a few of the dominant points in the area under review, will effectually dispel the idea that the Southern Uplands consist of a series of ridges zigzagging across the country. Like the Highlands, the area of the Southern Uplands is simply an old table-land, furrowed into ravine and valley by the operation of the various agents of erosion.

Beginning our survey of these Uplands in the east, we encounter first the Lammermuir Hills—a broad undulating plateau—the highest elevations of which do not reach 2000 feet. West of this come the Moorfoot Hills and the high grounds lying between the Gala and the Tweed—a tract which averages a some-

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what higher elevation, two points exceeding 2000 feet in height. The next group of mountains we meet is that of the Moffat Hills, in which head a number of important rivers—the Tweed, the Yarrow, the Ettrick, and the Annan. Many points in this region exceed 2000 feet; others approach 2500; and some reach nearly 3000 feet, such as Broad Law (2754) and Dollar Law (2680). In the south-west comes the group of the Lowthers, with dominant elevations of more than 2000 feet. Then follow the mountain-masses in which the Nith, the Ken, the Cree, the Doon, and the Girvan take their rise, many of the heights exceeding 2000 feet, and a number reaching and even passing 2500, the dominant point being reached in the noble mountain-mass of the Merrick (2764). In the extreme south-west the Uplands terminate in a broad undulating plateau, of which the highest point is but little over 1000 feet. All the mountain groups now referred to are massed along the northern borders of the Southern Uplands. In the south-west the general surface falls more or less gradually away towards the Solway—the 500-feet contour line being reached at 15 miles, upon an average, from the sea-coast. In the extreme north-east the high grounds descend in like manner into the rich low grounds of the Merse. Between these low grounds and Annandale, however, the Uplands merge, as it were, into the broad elevated moory tract that extends south-east, to unite with the Cheviots—a belt of hills rising along the English Border to heights of 1964 feet (Peel Fell) and 2676 (the Cheviot).

The general configuration of the main mass of the Southern Uplands—that is to say, the mountain groups that extend along the northern portion of the area under review, from Loch Ryan to the coast between Dunbar and St Abbs Head—is somewhat tame and monotonous. The mountains are flat-topped elevations, with broad rounded shoulders and smooth grassy slopes. Standing on the summit of some of the high points, one seems to be in the midst of a wide, gently undulating plain, the surface of which is not broken by the appearance of any isolated peaks or eminences. Struggling across the bogs and peat-mosses that cover so many of those flat-topped mountains, the wanderer ever and anon suddenly finds himself on the brink of a deep green dale. He discovers, in short, that he is traversing an elevated undulating table-land, intersected by narrow and broad trench-like valleys that radiate outwards in all directions from the dominant bosses and swellings of the plateau. The mountains, therefore, are merely broad ridges and banks separating contiguous valleys; in a word, they are, like the mountains of the Highlands, monuments of erosion, which do not run in linear directions, but form irregular groups and masses.

The rocks that enter into the formation of this portion of the Southern Uplands have much the same character throughout. Consequently there is less variety of contour and colour than in the Highlands. The hills are not only flatter atop, but are generally much smoother in outline, there being a general absence of those beetling crags and precipices which are so common in the Highland regions. Now and again, however, the mountains assume a rougher aspect. This is especially the case with those of Carrick and Gallo-way, amongst which we encounter a wildness and grandeur which are in striking contrast to the gentle pastoral character of the Lowthers and similar tracts extending along the northern and higher parts of the Southern Uplands. Descending to details, the geologist can observe also modifications of contour even among those monotonous rounded hills. Such modifications are due to differences in the character of the

component rocks, but they are rarely so striking as the modifications that arise from the same cause in the Highlands. To the trained eye, however, they are sufficiently manifest, and upon a geological coloured map, which shows the various belts of rock that traverse the Uplands from south-west to north-east, it will be found that the mountains occurring within each of those separate belts have certain distinctive features. Such features, however, cannot be depicted upon a small orographical map. The separation of those mountains into distinct ranges, by reference to their physical aspect, is even less possible here than in the Highlands. Now and again bands of certain rocks, which are of a more durable character than the other strata in their neighbourhood, give rise to pronounced ridges and banks, while hollows and valleys occasionally coincide more or less closely with the outcrop of the more readily eroded strata; but such features are mere minor details in the general configuration of the country. The courses of brooks and streams may have been frequently determined by the nature and arrangement of the rocks, but the general slope of the Uplands and the direction of the main lines of water-flow are at right angles to the trend of the strata, and cannot therefore have been determined in that way. The strata generally are inclined at high angles—they occur, in short, as a series of great anticlinal arches and synclinal curves, but the tops of the grand folds have been planed off, and the axis of the synclinal troughs, so far from coinciding with valleys, very often run along the tops of the highest hills. The foldings and plications do not, in a word, produce any corresponding undulations of the surface.

Mention has been made of the elevated moory tracts that serve to connect the Cheviots with the loftier Uplands lying to north-west. The configuration of these moors is tamer even than that of the regions just described, but the same general form prevails from the neighbourhood of the Moffat Hills to the head-waters of the Teviot. There, however, other varieties of rock appear and produce corresponding changes in the aspect of the high grounds. Not a few of the hills in this district stand out prominently. They are more or less pyramidal and conical in shape, being built up of sandstones often crowned atop with a capping of some crystalline igneous rock, such as basalt. The Maiden Paps, Leap Hill, Needs Law, and others are examples. The heights draining towards Liddesdale and the lower reaches of Eskdale, composed chiefly of sandstones, with here and there intercalated sheets of harder igneous rock, frequently show escarpments and terraced outlines, but have a general undulating contour; and similar features are characteristic of the sandstone mountains that form the south-west portion of the Cheviots. Towards the north-east, however, the sandstones give place to various igneous rocks, so that the hills in the north-east section of the Cheviots differ very much in aspect and configuration from those at the other extremity of the belt. They have a more varied and broken outline, closely resembling many parts of the Ochils and other portions of the northern and southern heights of the Central Lowlands.

The low-lying tracts of Roxburghshire and the Merse, in like manner, present features which are common to the inner region of the Central Lowlands. Occasional ridges of hills rise above the general level of the land, as at Smailholm and Stichel to the north of Kelso, while isolated knolls and prominences—some bald and abrupt, others smooth and rounded—help to diversify the surface. Bonchester Hill, Rubers Law, the Dunian, Penielheugh, Minto Hills, and the Eildons may be mentioned as examples. All of these are of igneous origin, some being mere caps of basalt resting upon a

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foundation of sandstone, while others are the stumps of isolated volcanoes.

In the maritime tracts of Galloway the low grounds repeat, on a smaller scale, the configuration of the lofty uplands behind, for they are composed of the same kinds of rock. Their most remarkable feature is the heavy mountain-mass of Criffel, rising near the mouth of the Nith to a height of 1800 feet.

Everywhere, therefore, throughout the region of the Southern Uplands, in hilly and low-lying tracts alike, we see that the land has been modelled and contoured by the agents of erosion. We are dealing, as in the Highlands, with an old table-land, in which valleys have been excavated by running water and its help-mates. Nowhere do we encounter any linear banks, ridges, or ranges as we find described in the class-books, and represented upon many general maps of the country. In one of those manuals we read that in the southern district 'the principal range of mountains is that known as the Lowther Hills, which springs off from the Cheviots, and, running in a zigzag direction to the south-west, terminates on the west coast near Loch Ryan.' This is quite true, according to many common maps, but unfortunately the 'range' exists upon those maps and nowhere else. The zigzag line described is not a range of mountains, but a water-parting, which is quite another matter.

The table-land of the Southern Uplands, like that of the Highlands, is of immense antiquity. Long before the Old Red Sandstone period, it had been furrowed and trenched by running water. Of the original contour of its surface all we can say is, that it formed an undulating plateau, the general slope of which was towards south-east. This is shown by the trend of the more important rivers, such as the Nith and the Annan, the Gala and the Leader; and by the distribution of the various strata pertaining to the Old Red Sandstone and later geological periods. Thus strata of Old Red Sandstone and Carboniferous age occupy the Merse and the lower reaches of Teviotdale, and extend up the valley of the Whitadder and the Leader into the heart of the Silurian Uplands. In like manner Permian sandstones are well developed in the ancient hollows of Annandale and Nithsdale. Along the northern borders of the Southern Uplands we meet with similar evidence to show that even as early as Old Red Sandstone times the ancient plateau, along what is now its northern margin, was penetrated by valleys that drained towards the north. The main drainage, however, then as now, was directly towards south-east.

Many geological facts conspire to show that the Silurian table-land of these Uplands has been submerged, like the Highlands, in whole or in part. This happened at various periods, and each time the land went down it received a covering of newer accumulations—patches of which still remain to testify to the former extent of the submergences. From the higher portions of the Uplands those accumulations have been almost wholly swept away, but they have not been

entirely cleared out of the ancient valleys. They still mantle the borders of the Silurian area, particularly in the north-east, where they attain a great thickness in the moors of Liddesdale and the Cheviot Hills. The details of the evolution of the whole area of the Southern Uplands form an interesting study, but this pertains rather to Geology than to Physical Geography. It is enough, from our present point of view, to be assured that the main features of the country were chalked out, as it were, at a very distant geological period, and that all the infinite variety in the relief of our land has been brought about directly, not by titanic convulsions and earth-movements, but by the long-continued working of rain and rivers—of frost and snow and ice, supplemented from time to time by the action of the sea.

The physical features more particularly referred to in this description are of course only the bolder and more prominent contours—those, namely, which can be expressed with sufficient accuracy upon sheets of such a size as the accompanying orographical map of Scotland. With larger maps considerably more detail can be added, and many characteristic and distinguishing features will appear according to the care with which such maps are drawn. In the case of the Ordnance Survey Map, on the scale of 1 inch to a mile, the varying forms of the surface are so faithfully delineated as frequently to indicate to a trained observer the nature of the rocks and the geological structure of the ground. The artists who sketched the hills must indeed have had good eyes for form. So carefully has their work been done, that it is often not difficult to distinguish upon their maps hills formed of such rocks as sandstone from those that are composed of more durable kinds. The individual characteristics of mountains of schist, of granite, of quartz-rock, of slate, are often well depicted: nay, even the varieties of igneous rock which enter into the formation of the numerous hills and knolls of the Lowlands can frequently be detected by the features which the artists have so intelligently caught. Another set of features which their maps display are those due to glaciation. These are admirably brought out, even down to the smaller details. A glance at such maps as those of Teviotdale and the Merse, for example, shows at once the direction taken by the old *mer de glace*. The long parallel flutings of the hill-slopes, *roches moutonnées*, projecting knolls and hills with their 'tails,' the great series of banks and ridges of stony clay which trend down the valley of the Tweed—these, and many more details of interest to specialists, are shown upon the maps. All over Scotland similar phenomena are common, and have been reproduced with marvellous skill on the shaded sheets issued by the Ordnance Survey. And yet the artists were not geologists. The present writer is glad of this opportunity of recording his obligations to those gentlemen. Their faithful delineations of physical features have given him many valuable suggestions, and have led up to certain observations which might otherwise not have been made.

MOUNTAINS, LAKES, RIVERS, AND ISLANDS.

By H. A. WEBSTER, sometime Honorary Editor of the *Scottish Geographical Magazine*.

MOUNTAINS.

THE following table of the Scottish Mountains contains the names and altitudes of all those that rise upwards of 3900 feet above the sea, of the greater number of those which exceed 3000 feet, and of a small number of less elevation which happen to be familiarly known. In the

difficult matter of orthography the commoner names, like Ben Ledi and Ben Lawers, are given in their current Anglicised form; for those which are of rarer occurrence in speech and writing, the Ordnance Survey's Gaelic spelling is usually retained. In a few cases the more

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Ht.	Name.	County.	Ht.	Name.	County.
4406	Ben Nevis,	Inverness.	3294	Maolte Lunndaidh,	Ross.
4296	Ben Muich Dhui,	Aberdeen.	3294	Beinn Fionn Laidh,	Ross.
4248	Braeriach,	Aberdeen & Inverness.	3290	Sgor Mhor,	Inverness.
4241	Cairntoul,	Aberdeen.	3282	Sgurr an Lochain,	Inverness.
4084	Cairngorm,	Aberdeen & Inverness.	3276	A'Chailleach,	Ross.
4060	Aonach Beag,	Inverness.	3273	Stob Ban,	Inverness.
4004	Ben Lawers (<i>with Cairn</i>), .	Perth.	3273	Benmore-Assynt,	Sutherland's highest p'k.
3999	Aonach Mor,	Inverness.	3268	Bread Cairn,	Forfar.
3961	Carn Dearg (Ben Nevis), .	Inverness.	3268	Meal Dubh Achadh, . . .	Inverness.
3924	Benabour or Beinn a' Bhuird,	Aberdeen.	3260	Sgurr Choinich,	Ross.
3890	Bensheargarnich,	Perth.	3250	An Cearcallach,	Inverness.
3862	Maam Suil or Mam Sodhail, .	Ross & Inverness.	3250	Mullach Coire Mhic Fhearchair,	Ross.
3843	Ben Avon,	Aberdeen.	3242	Beinn Eunaich,	Argyll.
3827	Benel or Am Blinnein, . .	Perth.	3241	Carn Fuaralach,	Ross & Inverness.
3795	Beinn Bhrotain,	Aberdeen.	3238	Craig Leacach,	Perth.
3786	Lochnagar,	Aberdeen.	3234	Highest peak in Skye, . .	Inverness.
3773	Sgurr na Lapach,	Ross & Inverness.	3234	Lurg Mhor,	Ross.
3771	Sgurr nan Ceathreamhnan, .	Ross & Inverness.	3234	Conivell (Coinncomheall),	Sutherland.
3765	(Benveedan or Beinn Fhada)	Argyll.	3224	Culvain,	Argyll.
	(Bidean nam Bian),		3224	Ben Vorlich,	Perth.
3757	Ben Alder or Ben Auler, . .	Inverness.	3222	Tigh Mor,	Inverness.
3750	(Nameless summit W of Stob	Inverness.	3218	Ciste Dhubbh,	Ross & Inverness.
	Ban,)		3217	Bensloch (Bensliabhoch),	Ross.
3726	Carn an Fhidleir,	Perth.	3215	Benchochail or Beinn a' Chochuill	Argyll.
3705	Benloj (Beinn Laoigh), . .	Perth & Argyll.	3214	Maol Chann dearg,	Ross & Inverness.
3700	Binnen Mor,	Inverness.	3214	Beinn Dubh Chraige, . . .	Perth.
3696	Creag Meaghaidh,	Inverness.	3194	Carn Geoidh,	Perth.
3666	An Riabhachan,	Ross.	3193	Carn Liath,	Perth.
3680	Ben Cruachan,	Argyll.	3192	Ben Lomond,	Stirling.
3673	Garbhleac,	Ross & Inverness.	3188	Sgurr Ban,	Ross.
3671	Benglo (Carn Gahhar), . .	Perth.	3185	Benmore,	Argyll (Mull's high. pk.).
3653	Sgor an Dubh,	Inverness.	3184	Stuc a Chroin,	Perth.
3653	Stob Choire an Easain Mhor,	Inverness.	3175	Bruach nan Iombrean, . .	Perth.
3651	Monadh Mor,	Inverness & Aberdeen.	3167	Sgurr na Gilleann,	Inverness (Skye).
3646	Tom a' Choinich,	Ross & Inverness.	3167	Sgurr na Banachdich, . .	Inverness (Skye).
3646	Aonach Beag,	Inverness.	3164	Sgor Chioleam,	Inverness.
3637	Sgurr Mor,	Ross.		{ Meall an Eoin (peak of Bencil- brick or Beinn Cleith-Bric), }	Sutherland.
3634	Sgurr nan Conbhaircan, . .	Ross & Inverness.	3154		
3621	Stob an t Sluichd,	Aberdeen.	3148	Stob Garbh,	Perth.
3614	Sgurr nan Ceathreamhnam, .	Inverness.	3143	Tolmount,	Forfar.
3611	Beinn Eibhinn,	Inverness.	3141	Sgurr Ruadh,	Ross.
3601	Sgor a' Mhaim,	Inverness.	3141	Ben nan Aighean,	Argyll.
3574	Caiplich,	Inverness.	3128	Sgurr Gaibhre,	Perth.
3569	Beinn a' Chlachair,	Inverness.	3125	Sgor nan Coireachan, . .	Inverness.
3559	Carn Eas,	Aberdeen.	3125	Ben Vannoch,	Perth.
3554	Sgurr a' Choir Ghlais, . . .	Inverness & Ross.	3113	Duncrub,	Dumbarton.
3553	Beinn a' Chaoruinn,	Aberdeen.	3105	Driesch,	Forfar.
3547	Beinn Dearg,	Ross.	3102	Creag a' Mhaim,	Ross.
3547	Schiehallion,	Perth.	3101	Ben-a'-Chroin,	Perth.
3545	Stob Coire an Easain, . . .	Inverness.	3099	Ben Tulachan,	Perth.
3541	Ben Starav,	Argyll.	3098	Sgurr na Sgine,	Ross & Inverness.
3540	Ben Creachan,	Perth & Argyll.	3092	Ben Vorlich,	Dumbarton.
3530	Ben Heasgarnich,	Perth.	3087	Carn na Caim,	Perth.
3525	Ben Doran or Doireann, . .	Argyll.	3087	Carn Maig,	Inverness.
	Sgurr Fhuaran (Scour Ouran)	(The highest part of Ben- more, Ross.)	3083	Carn Dearg,	
3500	Sgurr nan Clach Geala, . .	Ross.	3083	Binnein Beag,	Inverness.
3427	Stob Coire an Lochan, . . .	Perth.	3082	Sgurr na Creige,	Ross & Inverness.
3424	Cairn na Glasld,	Forfar & Aberdeen.	3077	Mount Keen,	Forfar.
3433	(Bideinn a' Ghlas Thuill (Teal- lach or Tallich),)	Ross.	3077	Mullach na Coireann, . .	Inverness.
3474	Sgurr Fiona,	Ross.	3074	Beinn Dheiceach,	Perth.
3450	Spidean a' Choire Leith (Liathach)	Ross.	3066	Beinn na Lap,	Inverness.
3452	Tuill Creagach,	Inverness.	3066	Sron a Coire Ghaibhrh, . .	Inverness.
3452	Sgurr a' Chaoruinn,	Ross.	3062	Meall a' Chrasgaidh, . . .	Ross.
3445	Glas Thulachan,	Perth.	3060	Fionn Bheinn,	Ross.
3443	Carn Ban,	Inverness.	3060	Meallfhuaroch,	Inverness.
3443	Mullach Coire Iubhair, . .	Inverness.	3058	Meall a' Chinn Deirg, . .	Ross.
3437	Beinn a' Chaoruinn (South), .	Inverness.	3048	Sgurr an Tuill Bhain, . .	Ross (Ben Sgulaire).
3433	Cnoc Dearg,	Inverness.	3045	Ben Chonzie,	Perth.
3429	Ben Wyvis (Beinn-Uabhaish),	Ross.	3045	A'Chailleach,	Inverness.
3424	Beinn Iutharn Mhor,	Aberdeen & Perth.	3043	Mayar,	Forfar.
3421	Meall nan Tarmachan, . . .	Perth.	3040	Ben Hope,	Sutherland.
3419	Carn Maig,	Perth.	3039	Eididh nan Clach Geala,	Ross.
3410	Sgor na Ciche,	Inverness.	3037	Glas Meall Mhor,	Perth.
3407	Meall Ghaordie,	Perth.	3036	Geal Charn,	Inverness (Glen Markie).
3406	Sgurr na Lapach (Maam Suil),	Inverness.	3034	Beinn Liath Mhor,	Ross.
3399	Ben Achallader,	Perth.	3031	Creag Peathraich,	Inverness.
3395	Gleourach,	Inverness.	3026	Morusig,	Ross.
3391	Carn Dearg,	Inverness.	3015	Scour Gairloch,	Inverness.
3383	Beinn Fhada, i.e., Ben Attow,	Ross & Inverness.	3015	Benalligin,	Ross.
3382	Am Bodach,	Inverness.	3015	Carn Sgulaire,	Inverness.
3378	Sgurr a' Bhealach Dheirg, .	Ross & Inverness.	3014	Carn Bhac,	Perth.
3377	Carn an Righ,	Perth.	3012	Creag nan Damh,	Inverness.
3370	Carn Gorm,	Perth.	3008	Ben a' Chlaibh,	Argyll & Perth.
3365	Sgurr a' Mhòraire,	Inverness.	3006	A'Ghlas Bheinn,	Ross.
3362	Benavere or Ben a' Bheichir,	Argyll.	3006	Carn Bhannein,	Perth.
3354	Beinn Chaluin,	Perth.	3005	Gealchar,	Inverness (E of L. Erich)
3353	Beinn Liathach,	Ross.	3004	Ben Vane,	Dumbarton.
3345	Buachaille-Etive,	Argyll.	3000	Sgurr Breac,	Ross.
3342	Aonach air Chirch,	Inverness & Ross.	3000	Stac Meall na Cuach, . .	Inverness.
3338	Meall Tionail,	Inverness.	2980	Foinaven,	Sutherland.
3333	Beinn Bheol,	Inverness.	2891	Ben Arthur or The Cobbler,	Argyll.
3317	The Saddle,	Inverness.	2875	Ben Ledi,	Perth.
3314	Cairn Bannoch,	Inverness & Ross.	2866	Goat Fell,	Bute (Arran).
3309	Beinn Eige (Ben Eay), . . .	Forfar.	2779	Canisp,	Sutherland.
3306	Ben Udlaman,	Ross.		{ Merrick, }	Kirkcudbright (highest in southern Scotland).
3305	Creag Mhor,	Perth.	2757	Ben Vrackie,	Perth.
3304	Ben Dearg,	Perth.	2399	Suilven (Sugarloaf), . .	Sutherland.
3300	An Sgarsoch,	Perth.	2393	Ben Venue,	Perth.
3298	Carn Liath,	Perth & Aberdeen.	822	Arthur's Seat,	Edinburgh.
		Inverness.	612	North Berwick Law, . . .	Haddington.

MOUNTAINS, LAKES, RIVERS, AND ISLANDS.

popular form and the more accurate are placed side by side. Further information in regard to many of the more important mountains will be found either under

their own names, in the articles on the several counties, or in those which treat of the Grampians, the Ochils, etc.

LAKES.

It would be tedious to enumerate that marvellous multitude of lakes which constitutes one of the striking features of Scotland, especially in its northern divisions. They vary in size from Loch Lomond, with its area of 28 square miles, down to the nameless and pool-like tarn on the mountain-top. While several are world-famous for the beauty of their scenery, and year by year attract a growing crowd of tourists, hundreds lie silent and unseen, save by the adventurous sportsman, and are chronicled by no laborious topographer. A glance at some of the sheets of the Ordnance Survey, such as No. 5, will show how in some parts the country is studded with them. The principal lakes, for extent or scenic attractions, are Ken, drained by a stream of the same name, the chief affluent of the southern Dee; Skene, 1300 above sea-level, drained by a remote affluent of the Annan, forming the magnificent waterfall called the Grey Mare's Tail; St Mary's Loch, and the Loch of the Lows, drained by the classic Yarrow, a sub-tributary of the Tweed; Doon, drained by the stream of the same

name; Lomond, drained by the western Leven, a tributary of the Clyde; Leven, drained by the eastern Leven; Conn and Ard, drained by the Forth; Katrine, Achray, Vennachoir, Voil, and Lubnaig, drained by the Teith, the chief affluent of the Forth; Tay, Earn, Lydoch, Erich, Rannoch, Tummel, Garry, Lows, Clunie, and Quiech, drained by the Tay and its affluents; Loch Lee, drained by the North Esk; Awe, Avick, Shiel, and Eck, south of the central mountain range, and near the west coast; Laggan, Ouchan (or Ossian), and Treag, drained by the Spean; Lochy and Archaig, drained by the Lochy into Loch Eil; Garry, Oich, Ness, and Ruthven, drained by the Ness into the Beaully Firth; Duntalliak, drained by the Nairn; Africk, drained by the Beaully; Maree, Fionn, Shallag, Fannich, Rusk, Luiehart, Monar, Glas, Moir, and Slin, in Ross and Cromarty; Shin, Naver, Furan, Baden, Loyal, and Moir in Sutherland; and Stenness, in the Mainland of Orkney.

The following table gives details in regard to a few of the larger lakes:—

Lake.	County.	River System (if any).	Length.	Breadth.	Area. Acres.	Max. Depth.	Height above the Sea.
Lomond, .	Stirling & Dumbarton.	Clyde & Leven.	22 m.	5 m. max.	17,420	630 ft.	23 ft.
Ness, . .	Inverness.	Ness.	22½ m.	1 m.	12,355	780 ft.	50 ft.
Awe, . .	Argyll.	Awe.	22½ m.	3 furl. to 3½ m.	9,995	102 ft.	118 ft.
Shin, . .	Sutherland.	Shin.	17½ m.	½ to 1½ m.	..	..	270 ft.
Maree, . .	Ross.	Ewe.	12½ m.	3 furl. to 2½ m.	7,090	360 ft. av.	32 ft.
Tay, . .	Perth.	Tay.	14½ m.	1½ m. max.	6,550	..	553 ft.
Archaig, .	Inverness.	Lochy.	12 m.	½ m.	3,976	..	140 ft.
Shiel, . .	Inverness & Argyll.	..	17½ m.	1 m. max.	4,880	..	..
Lochy, . .	Inverness.	Lochy.	9½ m.	1 to 9½ furl.	..	..	93 ft.
Monar, . .	Inverness & Ross.	Beaully.	4½ m.	3½ m.	..	..	663 ft.
Fannich, .	Ross.	Conan. [Erich.	6½ m.	3 to 7 furl.	..	..	822 ft.
Erich, . .	Perth & Inverness.	Tay, Tummel.	14½ m.	1½ m. to 9 furl.	1,444	..	1153 ft.
Naver, . .	Sutherland.	Naver.	6½ m.	4½ furl. max.	1,444	98 ft.	247 ft.
Earn, . .	Perth.	Tay & Earn.	6½ m.	6 furl.	2,118	600 ft.	306 ft.
Rannoch, .	Perth.	Tay & Tummel.	9½ m.	2 to 9 furl.	..	50-60 ft. av.	668 ft.
Stenness, .	Orkney.	..	4½ m.	1½ m. max.	..	..	..
Leven, . .	Fife.	Leven.	3½ m.	2 m. max.	3,406	90 ft.	353 ft.
Ken, . .	Kirkcudbright.	Ken.	4½ m.	200 to 800 yds.	..	..	745 ft.
Lydoch, . .	Perth & Argyll.	Tay.	5½ m.	½ m. max.	..	..	924 ft.
Fionn or Fuir, .	Ross.	Greinord.	5½ m.	½ furl. to 1½ m.	2,238	..	550 ft.
Loyal (Laoghal)	Sutherland.	Borgie.	4½ m.	7 furl.	1,623	..	369 ft.
Katrine, . .	Stirling & Perth.	Forth & Teith.	8 m.	7½ furl.	3,119	468 ft.	364 ft.

RIVERS.

As the prevailing rocks throughout a large part of Scotland are of the more impervious sorts, most of the abundant rainfall of the country finds its way to the sea by sub-aerial or surface channels; and it is only during a brief portion of the year that evaporation is powerfully at work. The running waters are consequently almost countless, every little Highland glen and every little Lowland valley having its burn or brooklet. If we divide the country into an eastern and western versant according as it discharges eastward into the so-called North Sea, or northward and westward into the Atlantic and its inlets, we find that the former is generally very much more extensive in all the northern division, and that for reasons already explained. The watershed or water-parting, which may be said to begin at Duncansbay, follows an extremely tortuous course

through Caithness and Sutherland, till, between Loch an Urchoill, discharging into Glencoul, and Loch nan Breac Mora, belonging to the Oikell system, it is only 3 or 4 miles from the sea on the west side of the island. In its S course through Ross and Cromarty it lies somewhat nearer the centre of the county (Dirrie Muir, 900 feet), but in Inverness-shire it again approaches very near the west coast, till turning eastwards it crosses the Great Glen between Lochs Lochy and Oich, and running between the basins of the Spey and the Spean again proceeds southward near the borders of Perthshire and Argyll. In the division south of the great estuaries of the Clyde and Forth the partition between East and West is much more even.

The following table shows the names and sizes of the principal rivers and streams:—

MOUNTAINS, LAKES, RIVERS, AND ISLANDS.

NAME.	Height above Sea of Source.	Area of Basin.	Counties partly including—	Head of Navigat. and Tidal Reach.	Length of Course.
Tweed,	1500 ft.	{ 1870sq.m. Partly in England. }	{ Peebles, Selkirk, Edinb., Roxb'gh, Berwick, Had- dington, Northumb'land. }	{ Berwick, 10 to } 12 m.	97 m.
ETTRICK,	1900 ft., Capel Pen.	.....	Selkirk.	.....	32½ m.
Yarrow,	695 ft., St Mary's Loch.	.....	Selkirk.	.....	14½ m.
TEVIOT,	1300 ft.	.....	Roxburgh.	.....	37½ m.
Jed,	1500 ft., Carlin Tooth.	.....	Roxburgh.	.....	21½ m.
Till,	{ An English confluent re- ceiving the Bowmont from Scotland. }	.....	.....	.....	40 m.
Bowmont, . . . .	.....	.....	Roxburgh (Northumb'land).	.....	20 m.
LYNE,	1250 ft.	.....	Peebles.	.....	18½ m.
EDDLESTON,	880 ft.	.....	Peebles.	.....	9 m.
GALA WATER,	1100 ft., Moorfoot Hills.	.....	Edinb., Selkirk, Roxburgh.	.....	21 m.
LAUDER OF LAUDER,	1375 ft., Lammer Law.	.....	Berwick, Roxburgh.	.....	21½ m.
WHITADDER, . . . .	.....	.....	Haddington, Berwick.	.....	34 m.
Forth,	{ 3000 ft., Duchray Water (Ben Lomond). 1900 ft., Avondhu. }	645 sq. m.	{ Stirling, Perth, Clackman- nan, Linlithgow, Edin- burgh, Kinross, Fife. }	Stirling, 52½ m.	116½ m.
BANNOCK BURN,	1250 ft.	.....	Stirling.	.....	14 m.
CARRON,	1200 ft., Carron Bog.	.....	Stirling.	.....	20 m.
LEITH, WATER OF,	1250-1400 ft., Pentlands.	.....	Edinburgh.	.....	24 m.
SOUTH ESK,	{ 1700 ft., Blackhope Scar } (Pentlands).	.....	Edinburgh.	.....	23 m.
North Esk,	Moorfoot Hills.	.....	Edinburgh.	.....	17 m.
TEITH,	1750 ft.	.....	Perth.	.....	34 m.
ALLAN,	Little Corum (Ochils).	.....	Perth, Stirling.	.....	20 m.
DEVON,	{ 1800 ft., near Bencluch } (Ochils).	.....	{ Perth, Kinross, Clack- mannan, Stirling. }	.....	33½ m.
LEVEN,	353 ft., Loch Leven.	153 sq. m.	Kinross, Fife.	.....	16 m.
Ore, . . . .	.....	.....	Fife.	.....	17 m.
Eden,	300 ft.	.....	Fife.	.....	20½ m.
Tay,	2980 ft., Benbuy.	2400 sq. m.	Perth, Forfar.	Perth.	119½ m.
BRAN, . . . .	.....	.....	Perth.	.....	{ 19 m. (incl. Quaich). }
ALMOND,	2750 ft.	.....	Perth.	.....	30 m.
EARN,	305 ft., Loch Earn.	.....	Perth.	.....	46½ m.
LYON,	2400 ft.	.....	Perth.	.....	34½ m.
TUMMEL,	480 ft., Loch Tummel.	.....	Perth.	.....	29 m.
Garry,	1330 ft., Loch Garry.	.....	Perth.	.....	22 m.
Tilt,	1050 ft., Loch Tilt.	.....	Perth.	.....	15½ m.
ISLA,	3100 ft., near Lochnagar.	.....	Forfar, Perth.	.....	37 m.
South Esk,	3150 ft.	.....	Forfar.	.....	29 m.
North Esk,	820 ft.	.....	Forfar.	.....	48½ m.
Dee,	4060 ft., Cairngorm.	700 sq. m.	Aberdeen, Kincardine.	.....	87½ m.
Don,	{ 1980 ft., near Meikle Geal } Charn.	530 sq. m.	Aberdeen.	.....	82½ m.
URY,	East of Strathbogie.	.....	Aberdeen.	.....	18 m.
Ythan,	768 ft., Ythan Wells.	.....	Aberdeen.	.....	35½ m.
Deveron,	1847 ft., Cabrach.	.....	Aberdeen, Banff.	.....	61½ m.
Bogie, . . . .	.....	.....	Aberdeen, Banff.	.....	14 m.
Spey,	1142 ft., Loch Spey.	1190 sq. m.	Inverness, Elgin, Banff.	.....	96 m.
AVON,	{ 2250 ft., Loch Avon } (Cairngorm).	.....	Banff.	.....	27½ m.
DULNAIN,	2600 ft., Monadhliath.	.....	Inverness.	.....	28 m.
Findhorn,	2800 ft., Monadhliath.	.....	Inverness, Nairn, Elgin.	.....	62½ m.
Nairn,	2500 ft., Carn Grioghair.	.....	Inverness, Nairn.	.....	38 m.
Beaul,	Affric Drumalban.	324 sq. m.	N.W. Inverness.	.....	40 m.
CANNICH,	Loch Moyley.	.....	Inverness.	.....	24 m.
FARRER, . . . .	.....	.....	Inverness.	.....	27½ m.
Conan, . . . .	.....	.....	Ross and Cromarty.	.....	12½ m.
Oikell,	1500 ft.	300 sq. m.	Sutherland, Ross.	Rosehall.	35½ m.
CARRON, . . . .	.....	.....	Ross and Cromarty.	.....	9 m.
SHIN,	270 ft., Loch Shin.	.....	Sutherland.	.....	7½ m.
Helmsdale or Ilie,	{ 770 ft., Loch Leum a' } Chlam Lain.	.....	Sutherland.	.....	27½ m.
Thurso,	Loch More.	.....	Caitness.	.....	27 m.
Naver,	247 ft., Loch Naver.	.....	Sutherland.	.....	18½ m.
Clyde (Daer Water),	2000 ft., Gana Hill.	1480 sq. m.	{ Lanark, Renfrew, Stirling, } Dumbarton.	Glasgow, 14 m.	106 m.
MEDWIN,	1230 ft.	.....	Lanark.	.....	15 m.
CALDER,	1000 ft., Elrig Moss.	.....	Lanark.	.....	10 m.
KELVIN,	160 ft.	.....	Stirling, Dumb'ton, Lan'rk.	.....	21 m.
LEVEN,	23 ft., Loch Lomond.	.....	Dumbarton.	3 m.	74 m.
DOUGLAS,	1500 ft., near Cairnstable.	.....	Lanark.	.....	20 m.
AVON,	Distinkhorn Hill.	.....	Lanark.	.....	24½ m.
CART, . . . .	.....	.....	Renfrew.	Paisley.	19 m.
IRVINE,	810 ft., near Drumclog.	.....	Ayr.	.....	20½ m.
Annick, . . . .	.....	.....	Renfrew, Ayr.	.....	16 m.
Garnock,	1600 ft., Mistylaw Hills.	.....	Ayr.	.....	14 m.
CESSNOCK,	980 ft., Auchmannoch Muir.	.....	Ayr.	.....	38 m.
Ayr,	1200-1500 ft., Muirkirk.	.....	Ayr.	.....	22½ m.
LUGAR,	1600 ft., Glenmore Water.	.....	Ayr.	.....	26½ m.
DOON,	680 ft., Loch Doon.	.....	Ayr.	.....	38 m.
Dee,	750 ft., Loch Dee.	.....	Ayr.	.....	22½ m.
KEN,	1870 ft.	.....	Kirkcudbright.	Tongland, 8 m.	38½ m.
Nith,	{ 1400 ft., Enoch Hill and } Prickeny Hill.	.....	{ Kirkcudbright. Dumfries, Ayr, Kirkcud- bright. }	.....	28½ m.
SCAR,	1600 ft.	.....	Dumfries.	.....	70½ m.
CLUDEN,	Cairn.	.....	Kirkcudbright, Dumfries.	.....	18½ m.
Annan,	1200 ft.	.....	Dumfries.	.....	23 m.
EVAN,	1000 ft.	.....	Lanark, Dumfries.	.....	49 m.
AE, . . . .	.....	.....	Dumfries.	.....	16½ m.
Moffat Water,	1800 ft.	.....	Dumfries.	.....	16 m.
Milk Water,	780 ft.	.....	Dumfries.	.....	14 m.
Esk,	{ 2000 ft., Ettrick Pen } (White Esk).	.....	Dumfries.	.....	17½ m.
Ewes,	Tudhope Hill.	.....	Dumfries.	.....	36½ m.
Tartas,	1748 ft., Hartsgarth Fell.	.....	Dumfries.	.....	11½ m.
Liddel,	650 ft., Dead Water Bog.	.....	Roxburgh, Dumfries.	.....	26½ m.

MOUNTAINS, LAKES, RIVERS, AND ISLANDS.

ISLANDS.

The islands of Scotland were at the census of 1861 ascertained to number 787, by the word island being understood any piece of solid land surrounded by water, which affords sufficient vegetation to support one or more sheep, or which is inhabited by man. Some of the uninhabited islands have pasturage for 300 or 400 sheep; others again only admit of one sheep being left at one time. The Hebrides extend for 205 miles along the west coast, and consist of about 160 islands and islets, of which about 100 are inhabited. Another archipelago, the Orkneys, numbering 52 considerable islands, though only 29 are permanently inhabited, is separated from the north-western extremity of Caithness by the Pentland Firth, 6 miles broad; and a third archipelago, that

of Shetland—100 islands, 28 permanently inhabited—is 48 miles north-north-east of Orkney. Islands not belonging strictly to any group are Mughdrum (32 acres), in the Firth of Tay; the Isle of May (146 $\frac{1}{4}$), Inchkeith, Crாமond, Inchcolm, Inchgarvie, Inchmickery, Craigleith, Lamb, Fidra, and the Bass Rock, in the Firth of Forth; and Arran, Bute, Great Cumbrae and Little Cumbrae, Sanda, Devar, Pladda, Holy Isle, and Ailsa Craig, in the Firth of Clyde. Of seaward rocks, the chief are Carr, a reef 1 mile north-north-east of Fife Ness; the Bell Rock or Incheape, a reef 11 $\frac{1}{4}$ miles south-east of Arbroath.

The following table gives the areas and population of the more important islands:—

NAME.	AREA.		Pop. 1891.	NAME.	AREA.		Pop. 1891.
	Square Miles.	Acres.			Square Miles.	Acres.	
Long Island, i.e., Lewis & Harris,	8.59	549,887	30,726	Egilsay (Orkney),	2.55	1,666	147
Lewis (Ross),	683	437,921	27,045	Muck	2.44	1,585,040	48
Skye (Inverness),	643.28	411,703,652	15,705	Mingalay (Inverness),	2.44	1,502,760	142
Mull (Argyll),	347.21	222,214,868	4,691	Ronay (North Uist, Inverness),	2.3	1,531,870	6
Mainland (Shetland),	..	242,310	19,741	Monach Island (Inverness),	2.3	1,495,966	5
Islay (Argyll),	246.6	157,851,449	7,375	Kirkibost (Inverness),	2.2	1,450,061	6
Pomona (Orkney),	206.9	132,477	10,498	Gometra (Argyll),	2	1,284,907	71
Harris (Inverness),	176.7	113,142,177	3,681	St Kilda (Inverness),	1.9	1,200	31
Arran (Bute),	168.58	107,572,774	4,824	Shuna (Inverness),	1.83	1,173,560	104
Jura (Argyll),	142.9	91,516,772	610	Graemsey (Orkney),	1.8	1,152	223
North Uist (Inverness),	135.7	86,858,333	3,231	Wiay (Inverness),	1.6	1,057,500	10
Yell (Shetland),	82.60	52,923	2,511	Sanderay (Inverness),	1.6	1,053,130	4
Hoy (Orkney),	52.8	33,819	1,320	Vementry (Shetland),	1.5	960	..
Bute (Bute),	48.68	31,161,421	11,735	Isle of Noss (Shetland),	1.19	762	3
Unst (Shetland),	46.76	29,929	2,269	Fuday (Inverness),	1	760,170	7
Rum	41.85	26,785,790	53	Hascosay (Shetland),	1.17	751	..
Benbecula (Inverness),	35.7	22,873,783	1,534	Little Cumbrae (Bute),	1	722,914	17
Tiree (Argyll),	33.54	21,471,896	522	Trondra (Shetland),	1.12	722	154
Coll (Argyll),	30.6	19,396,508	522	Borearay (North Uist, Inverness),	1	717,513	152
Sanday (Orkney),	25.77	16,498	1,020	Lunga (Jura, Argyll),	1	690,538	15
Barra (Inverness),	25.1	16,117,688	2,131	Holy Island (Arran, Bute),	1.08	691,662	16
Westray (Orkney),	24.24	15,516	2,103	Inchmarnock (Bute),	1.05	675,054	18
Raasay (Inverness),	24.5	15,704,384	438	Erraid (Argyll),	1	642,481	47
South Ronaldsay (Orkney),	20.43	13,080	2,315	Killegray (Inverness),	..	626,090	8
Rousay (Orkney),	18.65	11,938	774	Pabbay (Barra, Inverness),	..	614,480	13
Colonsay (Argyll),	16.00	10,878,915	355	Caif of Eday (Orkney),	..	599	..
Fetlar (Shetland),	16.77	10,734	363	Upey (Shetland),	..	598	68
Stronsay (Orkney),	15.3	9,840	1,275	Sanday	..	577,712	..
Eigg (Inverness),	12	7,803,717	233	Pabay (Strath, Inverness),	..	559,290	7
Eday (Orkney),	11.5	7,372	647	Oronsay (Morven, Argyll),	..	539,157	23
Shapinsay (Orkney),	11.2	7,172	993	Ensay (Inverness),	..	537,080	11
Bressay (Shetland),	10.81	6,919	799	Berneray (Barra, Inverness),	..	460,920	36
Scalpay (Strath, Inverness),	10	6,489,830	49	Wiay (Inverness),	..	451,060	..
Lismore (Argyll),	9.39	6,014,579	501	Hellisay (Inverness),	..	384,240	..
Ulva (Argyll),	7.6	4,924,546	46	Sanda (Argyll),	..	381,200	36
Whaleay (Shetland),	7.62	4,681	927	Garbh Eileach (Argyll),	..	342,088	..
Baleshare (Inverness),	7.2	4,631,321	318	Stromay (Inverness),	..	348,090	..
Grimsay (Inverness),	7	4,395,223	281	Eilean Fladday (Inverness),	..	336,910	76
Muckle Roe (Shetland),	6.81	4,362	213	Torsay (Argyll),	..	275,060	7
Seil (Argyll),	5.96	3,820,344	548	Gighay (Argyll),	..	264,930	398
Luing (Argyll),	5.93	3,797,560	632	Gunna (Argyll),	..	260,190	..
Gigha (Argyll),	5.79	3,709,471	368	Eorsa (Argyll),	..	259,228	..
Scarba (Argyll),	5.74	3,675,493	501	Inch Kenneth (Argyll),	..	248,864	3
Taransay (Inverness),	5.09	3,601,770	501	Isay (Inverness),	..	234,320	..
Berneray (Harris),	5.27	3,376,777	239	Hometray (Inverness),	..	233,480	..
Foula (Shetland),	5.15	3,300	92	Fiuiay (Inverness),	..	217,500	..
Kerrera (Argyll),	4.9	3,140,570	92	Soa (Argyll),	..	210	..
Great Cumbrae (Bute),	4.87	3,126,397	1,784	Cara (Argyll),	..	203,875	3
Burra, East and West (Shetland),	4.72	3,024	695	Muldoamich (Inverness),	..	203,530	..
Canna	4.8	2,908,046	40	Clasay Mor and Beg,	..	201,790	..
South Walls (Orkney),	4.46	2,855	681	Little Colonsay (Argyll),	..	200	2
Burray (Orkney),	4.19	2,683	423	Lunga (Argyll),	..	195,268	15
Flotta (Orkney),	4.15	2,661	78	Ascrib Islands (Inverness),	..	187	..
Soay (Inverness),	4.15	2,634,660	181	Tahay (Inverness),	..	183,121	..
Rona (Portree, Inverness),	4	2,564,905	32	Eileach Naoinn,	..	171,600	..
Vatersay (Inverness),	3.9	2,519,320	501	Eileach Naoinn,	..	169,290	..
North Ronaldsay (Orkney),	3.72	2,387	454	Longay (Inverness),	..	164,950	..
Eriskay (Inverness),	3.56	2,299,970	247	Stockinish (Inverness),	..	155,970	..
Iona (Argyll),	3.8	2,264,285	64	Vaccasay (Inverness),	..	154,400	..
Pabbay (Harris, Inverness),	3.37	2,168,840	223	Texa (Islay, Argyll),	..	151,992	..
Oronsay (Colonsay, Inverness),	3.075	1,968,532	517	Nave (Argyll),	..	150,531	..
Fair Isle (Shetland),	3.02	1,939	517	Flodday More (Inverness),	..	149,580	..
Scalpay (Harris, Inverness),	3	1,917,240	517	Flodday (North Uist, Inverness),	..	149,050	..

THE BOTANY OF SCOTLAND.

By THOMAS KING, Professor of Botany in Anderson's College Medical School, President of the Natural History Society of Glasgow.

THE geographical position of a country, its climate, soil, and other physical features determine the character of its vegetation. In the tropics, where the temperature is high and moisture abundant, vegetation is rank and species numerous; but as we recede from the equator towards either pole growth becomes less luxuriant and species fewer, till at last in the extreme north or south the only plants to be found are a few mosses and lichens. Elevation above the sea-level has the same effect on vegetation as distance from the equator. In ascending a mountain we find that the species get smaller in size and fewer in number the higher we rise, till at the snow-line we find forms similar to those of the Arctic or Antarctic regions. The mainland of Scotland lies between $54^{\circ} 38'$ and $58^{\circ} 40'$ N. lat., and is separated from the continent of Europe by the North Sea. The western side is much broken up, being chiefly composed of islands and peninsulas, while the eastern coast has few openings. Great part of the country consists of mountains and moors with a peaty, boggy, or rocky soil. The climate is not subject to extremes of temperature, being modified by the surrounding sea, and especially by the Gulf Stream; but it is moist and variable, and much moister on the western side than on the eastern.

VEGETATION OF THE DIFFERENT PARTS OF SCOTLAND.

(A) FLOWERING PLANTS.

1. THE MOUNTAINS.—Mountains support a characteristic flora, composed of what are known as alpine plants—that is, plants whose natural habitat is cold, elevated situations. They are mostly perennial plants of lowly stature with firm stems and roots. As regards their surface, some are smooth, while others are densely covered with hairs. In mode of growth many are scattered, but others social, forming large patches, and their flowers are remarkable for number, size, and brilliance of colour.

On the mountains of Central Europe the alpine zone of vegetation begins at an elevation of about 5000 feet and extends upwards to the snow-line; but in Scotland, owing to the difference of latitude, it begins as low as 2000 feet and extends to the tops of our highest mountains; while in the Arctic regions plants of alpine character are found near the sea-level. The occurrence, however, of alpine plants is not regulated merely by latitude and elevation—the trend of the isothermal lines, the nature of the underlying rock, the supply of moisture, and other natural conditions, all have their influence. The mountains of Scotland, being higher than those of England, Wales, and Ireland, situated further north, and covering a larger area, support a more extensive alpine flora. The richest localities are the mountains of Perthshire, the mountains of Forfarshire, and those of Aberdeenshire; while Ben Nevis, the highest mountain in Britain, is poor in alpine species.

In the United Kingdom there are about 1800 species of flowering plants and ferns, and of these more than 100 are reckoned as alpine.

ORIGIN OF OUR ALPINE FLORA.

According to a theory propounded by the late Professor Edward Forbes, Scandinavia is the original home of our alpine plants. There we find grow-

ing freely the same species as occur on the mountains of our own country. There is no evidence to show that Britain and Norway were ever united; but plants were carried from the one country to the other by means of icebergs during the glacial period, when the distribution of land and water was very different from what it is to-day. Indeed, the track of migration can still be pointed out. 'On the Faroe Islands we have three plants of the Scandinavian type which have stopped short there—viz., *Saxifraga tricuspidata*, *Kenigia islandica*, and *Ranunculus nivalis*. In the Shetland Islands the *Arenaria Norvegica*, a common plant on the mountain plateaux of Norway, reaches its southern limits. On the northern shores of the mainland the beautiful Norwegian primrose appears and ceases' (Dr H. Macmillan).

The following list of the most noteworthy Scottish alpine plants, arranged in the order of their sequence in the Natural System, shows that a number of Scandinavian species that have reached the Perthshire and Forfarshire mountains have advanced no further south, and that some have got as far as the north of England and have not penetrated into Wales, while others have reached the Alps of Switzerland, and there, at a suitable elevation, flourish among an alpine flora not found in Scandinavia.

Thalictrum alpinum, L. (Alpine Meadow Rue). This species, being widely distributed throughout Europe, Asia, and N. America, affords a good illustration of the diminutive size of alpine plants compared with closely related lowland forms. The Yellow Meadow Rue (*T. flavum*, L.), so common in moist places in England, is a stout rank-growing plant, 3 to 4 feet high, while this slender mountain species attains a height of only 4 to 8 inches.

Arabis petraea, Lamk. (Alpine Rock Cress). Shetland, Sutherland, Aberdeen, Ben Loeigh, Ben More in Mull, N. Wales, Ireland.

Draba rupestris, R. Br. (Rock Whitlow-grass). Small and inconspicuous; found in Arctic Europe and Arctic America, but not on the Alps of Switzerland. As a British plant it is confined to a few localities in Scotland, as Ben Hope in Sutherland, Aberdeen, Perth.

Cochlearia officinalis, L. (Scurvy-grass), var. *alpina*, Wats. It is a very remarkable fact that Scurvy-grass should be found both on the seashore and on the tops of our highest mountains, but not in the tract between.

Silene acaulis, L. (Moss Campion). One of the commonest and most beautiful of all our alpine plants. A good example of a social species, as it forms great moss-like cushions several feet across. The pink flowers, half an inch in diameter, are in such profusion as almost to conceal the foliage. Found in Asia, N. America, Arctic and Central Europe, Wales, N. of England, N. of Ireland, Scotland.

Lychnis alpina, L. (Red Alpine Catchfly). Very rare; N. of England, Forfar.

Cerastium alpinum, L. (Hairy Alpine Chickweed). Illustrates two characters of alpine plants—woolliness, and largeness of flowers; Wales, N. of England, Perth, Forfar.

Arenaria rubella, Hook. (Alpine Sandwort). Very rare; Ben Hope in Sutherland, Perth, but no farther south.

Cherleria sedoides, L. (Cyphel). A small, deeply-rooted, social plant, with narrow leaves and incon-

spicuous flowers. Its distribution is curious. It grows on the mountains of Southern and Central Europe and in Scotland, which is its northern limit. Dr H. Macmillan, in his 'Holidays on High Lands,' suggests that this may be one of the plants growing in Scotland before the immigration of the Scandinavian species. Plentiful on Ben Lawers.

Sagina nivalis, Fr. (Alpine Pearlwort). Very rare; Perth, Forfar.

Astragalus alpinus, L. (Alpine Milk Vetch). Very rare; Forfar, Aberdeen.

Oxytropis campestris, D.C. (Pale Yellow Oxytropis). One of the rarest of British plants; Forfar only.

Dryas octopetala, L. (Mountain Avenas). The handsome white flowers, an inch in diameter, are succeeded by a remarkable cluster of seed-vessels with awns two inches long. This favourite mountain flower is found in England, Wales, Scotland, Ireland.

Sibbaldia procumbens, L. Named by Linnæus in honour of Sir Robert Sibbald, who, in 1684, published 'Scotia Illustrata,' one of the earliest works on the natural history of Scotland. In it he gives a figure of this plant. Widely distributed, but in the United Kingdom confined to Scotland; on Ben Lawers so abundant as to form in places a green sward instead of grass.

Alchemilla alpina, L. (Alpine Lady's Mantle). One of the commonest Scottish mountain plants. The flowers are inconspicuous, but the shining, silvery foliage is remarkably beautiful; Ireland, N. of England, but not found in Wales.

Saxifraga oppositifolia, L. (Purple Mountain Saxifrage). Though the foliage is not so pleasing as that of the moss campion, the purple flowers, which are about the same size as those of that species, are even more beautiful. They begin to open as early as April, and some may be found all through the summer. Widely distributed over the globe, and from Wales northwards one of our commonest alpine plants. *S. nivalis*, L. (Alpine Clustered Saxifrage). Wales, N of England, Scotland, Ireland. *S. rivularis*, L. (Alpine Brook Saxifrage). Rare; Inverness, Aberdeen, Perth. *S. cernua*, L. (Drooping Alpine Saxifrage). This small, slender plant has a wide range of distribution, being found in the Arctic regions of Europe, Asia, and America, on the Himalayas and the mountains of Central Europe, but in Britain on the top of Ben Lawers only. Every collector knows the spot, and the plants are now few and diminutive. Even forty years ago Hooker and Arnot said, 'Now almost extinct; yet it still holds on. It would, however, be well if all who search for it would follow the example of an English doctor who visited the mountain a few years ago. He would not gather a single specimen, but in presence of this rare plant he lifted his hat. It seldom flowers, but reproduces itself by means of small red buds borne in the axils of the upper leaves.'

Cornus suecica, L. (Dwarf Cornel). It is instructive to contrast this alpine plant, 3 inches high, with *C. sanguinea* (the Dogwood of our shrubberies), which attains a height of 6 feet or more; Yorkshire, the Cheviots, and the Scottish Highlands.

Erigeron alpinus, L. (Alpine Fleabane). Perth, Forfar.

Gnaphalium supinum, L. (Dwarf Cudweed). On the tops of the Scottish mountains as far south as Ben Lomond. *G. norvegicum*, Gunn. (Norwegian Cudweed). Very rare; Aberdeen, Forfar.

Mulgedivum alpinum, Less. (Blue-flowered Sow-thistle). This rare species is a giant among alpine plants, attaining a height of 4 feet; Aberdeen, Forfar.

Saussurea alpina, D.C. England, Wales, Scotland Ireland.

Of the genus *Hieracium* many beautiful alpine forms occur on the Scottish mountains.

Phyllodoce (Menziesia) cerulea, Bab. Found in Britain on the Sow of Athole only—if indeed it still exists.

Loiseleuria (Azalea) procumbens, Desv. (Trailing Azalea). A small, much-branched, evergreen under-shrub, clinging close to the ground, and bearing numerous minute pink flowers; the Scottish mountains, especially those of Forfar. Not found in England, Wales, or Ireland.

Gentiana nivalis, L. Most alpine plants are perennial, but this is annual. Some specimens do not exceed an inch in height, but in favourable situations it attains a height of 6 inches. On account of its rarity and the beauty of its blue flowers it is in danger of being exterminated by collectors; Perth and Forfar only.

Myosotis alpestris, Schmidt (Alpine Forget-me-not). The large blue flowers greatly surpass in beauty those of the lowland species of this genus. Rare; N of England, Perth.

Veronica alpina, L. (Alpine Speedwell). Rare; mountains of the Scottish Highlands.

Bartsia alpina, L. N of England, mountains of the Scottish Highlands.

Betula nana, L. (Dwarf Birch). A bush 1 to 3 feet high; N of England, the Scottish mountains. This is the birch of the Arctic regions.

Salix lanata, L. (Woolly Willow). This rare and beautiful willow is a shrub 1 to 3 feet high, with large woolly leaves; Aberdeen, Perth, Forfar.

The following four species of Willow are also confined to the mountains of Scotland:—*S. lapponum* (L.), *S. arbuscula* (L.), *S. myrsinites* (L.), *S. reticulata* (L.), while *S. herbacea*, L. (Least Willow), the smallest British shrub, is found on the tops of the highest mountains in England, Wales, Scotland, and Ireland.

Of the genus *Juncus* (Rush), three alpine species found in Scotland, but not elsewhere in the United Kingdom, may be mentioned—*J. trifidus* (L.), *J. castaneus* (Sm.), *J. biglumis* (L.)

Luzula arcuata, Wahl. (Mountain Wood-rush). The smallest and rarest of our Wood-rushes, and perhaps the most characteristic plant of the Cairngorm mountains, on whose tops it forms a sward.

Of the genus *Carex* (Sedge) the following three species are also confined to the Scottish mountains:—*C. rupestris* (All.), *C. lagopina* (Wahl.), *C. alpina* (Sw.)

2. THE MOORS.—These are very extensive, but their vegetation, consisting chiefly of rushes, sedges, grasses, heaths, and mosses, is rather monotonous. However, in August and September nothing can surpass the beauty of the Heather in flower. In the United Kingdom there are ten different plants popularly known as heaths; of these Scotland has only four, and one—*Menziesia*—is so rare that practically we have only three. First, the Common Heather or Ling (*Calluna vulgaris*, Salisb.); second, Fine-leaved Bell Heath (*Erica cinerea*, L.); and third, Cross-leaved Bell Heath (*E. tetralix*, L.). All these three are occasionally found with white flowers, so that the white heather eagerly sought for by tourists in the Highlands is not a different species. Indeed, on the same branch one twig may be found with white flowers and another with them coloured.

Ling reaches an elevation of over 3000 feet; the two Bell Heaths over 2000. In boggy places among sphagnum and heather the rare and pretty under-shrub *Andromeda polifolia*, L., with its large, waxy, urn-shaped, rose-coloured flowers, may occasionally be found. The much commoner creeping plant *Vaccinium*

Oxycoccus, L. (the Cranberry), grows in similar places. On dry moors in the north, as about Grantown-on-Spey, *Arctostaphylos Uva-ursi*, Spreng. (the Bearberry), and *Vaccinium Vitis-Idæa*, L. (the Cowberry), grow intermixed and take the place of heather. They are pretty evergreen undershrubs bearing red berries. The Cowberries, called in the north Cranberries, are made into jelly.

Another moor plant belonging to the same Natural Order as the heather (*Ericaceæ*) has a curious history. Its name occurs in the list of excluded species at the end of Hooker's 'Student's Flora,' thus—'*Ledum palustre* (L.), NW Ireland, Giesecke; never confirmed.' A few years ago a schoolmaster in Stirlingshire, who had offered a prize for the best collection of dried plants, found in the collection given in by a girl an unfamiliar-looking plant, which on examination proved to be *Ledum palustre*. Specimens were sent to Sir Joseph Hooker, and he wrote a very kind letter to the girl. *Ledum palustre* was now acknowledged to be a British plant. But, unfortunately, as soon as its place of growth was known a descent was made upon it, and it was almost exterminated. However, a few plants still exist (1894), and there are vague reports of its having been seen in Flanders Moss, farther west.

Myrica Gale, L. (Bog Myrtle), a fragrant bush 1 to 3 feet high, is common on our moors.

All the three British Sundews are found on our Scottish moors—*Drosera rotundifolia*, L., common; *D. anglica*, Huds., and *D. intermedia*, Hayne, chiefly in the north.

Of the four species of British Butterworts we have three—*Pinguicula vulgaris*, L., common; *P. lusitanica*, L., a small pale-flowered species frequent in Arran and along the west coast generally; and *P. alpina*, L., in Skye and Ross.

The Sundews, Butterworts, and Bladderworts capture insects for food, and so are called insectivorous plants.

Eriophorum vaginatum, L., and *E. angustifolium*, Roth (Cotton Sedges), make our moors white in early summer.

3. THE SEASHORE.—The seashore also supports a characteristic flora, consisting of a considerable number of moderate-sized plants with roots running deep into the sand. The leaves are mostly smooth, thick, and fleshy, and of the pleasing whitish tint known as glaucous or sea-green. The following list shows our principal Scottish species:—

Glaucium luteum, L. (Horned Poppy), so named from its being glaucous and having an extraordinary seed-vessel, a foot long. This is a distinguished-looking plant, 1 to 2 feet high, with handsome, deeply-lobed leaves, and beautiful yellow flowers 3 inches in diameter. Now rare on the west coast, but still existing in Brussa and Little Cumbrae.

Brassica oleracea, L. (Wild Cabbage). This is the plant from which, by cultivation, have been derived cabbage, cauliflower, Brussels sprouts, and our national vegetable, Scotch kale. Though said to be found on our sea-cliffs, we cannot claim it as a Scotch plant, for it is not considered truly wild farther north than the Welsh coast. Flowers yellow.

Crambe maritima, L. (Sea-kale). This is the sea-kale of our gardens, the young sprouts of which are used in spring instead of asparagus. The large leaves are very like those of inferior Scotch kale, but the flowers are white, and the seed-vessels of the two plants are very different. Found in Kirkcudbright, Wigtown, Ayr, Islay, Arran. Very rare on the east coast.

Silene maritima, With. (Sea Bladder Campion). One of our commonest and prettiest shore plants, forming round white-flowered tufts on the gravel.

Eryngium maritimum, L. (Sea Holly). A remarkably handsome, much-branched plant, 1 to 2 feet high, with tough, spiny, glaucous leaves, and dense oval heads of bluish flowers. No one at first sight would take this for an umbellifer. Frequent on sandy shores.

Critheum maritimum, L. (Sampshire). On sea-cliffs in Ayr, Wigtown, Kirkcudbright. This is the plant mentioned in King Lear, iv. 6—

"Half way down
Hangs one that gathers sampshire; dreadful trade!"

It is excellent when pickled.

Ligusticum scoticum, L. (Lovage). Frequent on the shores of Scotland, but just reaching the north of England and the north of Ireland, so that the specific name is very appropriate. On the Continent it extends from the Arctic regions to Denmark. Formerly used as a pot-herb.

Convolvulus Soldanella, L. (Sea Bells). The stems of this Convolvulus do not twine, but lie along the sand. A highly ornamental plant, with dark-green, polished leaves and large pink flowers. It has been exterminated in Cumbrae, but may still be found on the west side of Arran, at Prestwick, in Wigtown, etc.

Mertensia maritima, Don (Oyster Plant). A curious plant with thick, glaucous leaves, and long prostrate branches spreading over the gravel, and bearing many fine blue flowers. It has a fishy taste, hence its English name. West side of Arran, Wigtown, etc.

Armeria maritima, Willd. (Sea Pink). Found, like Scurvy-grass, on the shore and on the tops of high mountains.

Salicornia herbacea, L. (Glasswort). A curious fleshy plant, with smooth, cylindrical, leafless stems. Common on muddy shores.

Salsola Kali, L. (Saltwort). A succulent, spiny herb, frequent on sandy shores.

Carex arenaria, L. (Sand Sedge). Common on all our shores.

Psamma arenaria, R. and S. (Sea Reed). The coarse grass with long white spike, so common on sandy shores at some distance from the water.

Zostera marina, L. (Grass Wrack). A flowering plant growing in the sea. The leaves, a yard long, resemble narrow ribbons. Common. *Z. nana*, Roth (Dwarf Grass Wrack). Leaves 6 inches long, narrow. Common on the flat shore at Fairlie and near Langbank. Rare elsewhere.

4. THE WATERS.—Some aquatic plants grow entirely submerged, others with the leaves floating on the surface; but a greater number with the lower part only submerged, and the top standing out of the water. Aquatic plants generally are composed of loose tissue full of air cavities, and the first and second kinds especially have long, thin, flexible stems and leaf-stalks, so that they are able to sway about easily with the current.

Ranunculus aquatilis, L. (Water Crowfoot). Submerged leaves formed of narrow segments, so that they offer little resistance to the current. Flowers white. *R. Lingua*, L. (Great Spearwort). Our largest buttercup. Stem, 3 feet high; flowers yellow, 1½ inch diameter. Not common; Possil Marsh near Glasgow, Lochwinnoch, etc.

Nymphaea alba, L. (White Water Lily). Our most beautiful water plant. Frequent.

Nuphar luteum, Sm. (Yellow Water Lily). Commoner than the last. *N. pumilum*, Sm. (Least Water Lily). Rare; Mugdock and Bardowie Lochs near Glasgow.

Subularia aquatica, L. (Awilwort). A small entirely submerged herb found in the margins of lakes. Rare; Loch Lomond, Loch Dochart, Mull.

Hippuris vulgaris, L. (Mare's Tail). A curious plant

standing 6 to 12 inches out of the water. Leaves in whorls, with an inconspicuous flower in the axil of each leaf. Not common, but plentiful in Possil Marsh near Glasgow.

Cicuta virosa, L. (Water Hemlock, Cowbane). 3 to 4 feet. Poisonous. Rare; small lochs near Glasgow.

Lobelia Dortmanna, L. (Water Lobelia). Leaves submerged, flower-stalk rising above the surface and bearing a few pale lilac blossoms. Valued chiefly for its rarity. Lochan Loisken near Dunoon, Loch Ranza, Loch-an-Eilan in Inverness.

Utricularia vulgaris, L. (Bladderwort). Leaves much divided, and bearing many sacs, each provided with a door which opens from the outside inwards, but not in the opposite direction. Minute water animals enter, but being unable to get out again die, and their decaying bodies furnish the plant with food. Rare; Kilmalcolm, Balloch at the side of the Leven, where it flowers. *U. minor*, L., is found in Possil Marsh.

Lysimachia thyrsoiflora, L. (Tufted Loosestrife). Frequent near Glasgow, Castlesemple Loch.

Elodea canadensis, Mich. (Canadian Pondweed). This American plant was first noticed in Europe about 1836, at Warrington in Ireland. Ten years later it was discovered in a pond at Duns Castle, since which time it has spread rapidly, filling up our ponds and ditches. All the male flowers grow on one plant, and all the females on another; but no male flowers were observed in this country up till 1880, when they were found in a pond at the foot of the Braid Hills near Edinburgh. However, the stem, which attains a length of 4 feet, breaks readily, and every fragment throws out roots, so that the plant is able to propagate itself independently of seed. Under the microscope the contents of the leaf-cells are seen to be in motion.

Typha latifolia, L. (Reed Mace). One of our most striking water plants, 6 feet high, bearing at top a long cylindrical dark-brown inflorescence; hence its English name. Rare, wild, but often planted in ornamental ponds. *T. angustifolia*, L., a smaller and rarer species, is found in Kirkcudbright and Dumfries.

Sparganium ramosum, Curtis (Bur-reed). The leaves resemble those of Iris, but the seed-vessels form spherical prickly heads an inch in diameter, like burs. Common. The other Scottish species, *S. simplex*, Huds., *S. affine*, Schn., and *S. minimum*, Fr., are frequent.

Lemna minor, L. (Duckweed). A minute, floating plant an eighth of an inch in diameter, not differentiated into stem and leaf, emitting from its under surface a single root, which merely hangs down in the water, and bearing, rarely, on its edge a microscopic flower. Common on still water. The other three British species are all found in Scotland, but are rare compared with *L. minor*.

Alisma Plantago, L. (Water Plantain), common, and *A. ranunculoides*, L., not common. These plants are interesting among monocotyledons as having many free carpels, like the buttercup, and the flower clearly distinguished into calyx and corolla.

Of the genus *Potamogeton*, or Pondweed, we have several species, some entirely submerged, others with the upper leaves floating; for example, *P. natans*, L., *P. crispus*, L., *P. perfoliatus*, L.

Eriocaulon septangulare, With. (Pipewort). This plant is interesting on account of its distribution. It is the only British representative of the Natural Order Eriocaulonæ, and is found in Skye, a few of the other Western Isles, and the west of Ireland, but nowhere else in Europe. It is found, however, on the eastern shores of North America. By what natural agency has it been brought across?

Cladium germanicum, Schrad. (Fen-Sedge). A large

grass-like plant, 3 to 6 feet high. Common in the English Fens, but rare in Scotland. Sutherland, Kirkcudbright, and discovered in 1894 in Bute.

Scirpus lacustris, L. (Bulrush). 4 to 8 feet high, $\frac{3}{4}$ inch thick, round, spongy within. This is the plant used in making rush-bottom chairs.

5. MARSHES.—There is no sharp distinction between truly aquatic plants and those that grow in marshy ground, a few of which may be mentioned.

Calthapalustris, L. (Marsh Marigold). Very common. The bright yellow flower-leaves are sepals, and the petals are absent.

Trollius europæus, L. (Globe Flower). A remarkably handsome flower found in moist places near upland streams. The petaloid sepals do not open out, but form a yellow ball an inch in diameter, enclosing the small narrow petals.

Viola palustris, L. (Marsh Violet). Easily recognized by its rounded leaves and pale lilac streaked flowers.

Parnassia palustris, L. (Grass of Parnassus). Flowers solitary, large, white, furnished with curious glandular stamens. The flower opens late in the season—Aug., Sept. Frequent.

Potentilla Comarum, Nestl. (Marsh Cinquefoil). A handsome plant with a long woody rhizome, pinnate leaves with five to seven leaflets, and dull purple flowers.

Lythrum Salicaria, L. (Purple Loosestrife). A very conspicuous plant frequently found in ditches and moist places. Stem 4 feet high, upper part covered with beautiful purple flowers, which are of three forms—long-styled, short-styled, and mid-styled. Darwin, when experimenting on cross- and self-fertilization, made much use of this species and of the common primrose, which has flowers of two forms—long-styled and short-styled.

Eranthe crocata, L. (Water Dropwort). A coarse, rank, poisonous umbellifer 4 feet high, with leaves resembling those of celery. The white, succulent, tuberous roots are sometimes eaten by children with fatal results.

Bidens cernua, L., and *B. tripartita*, L. (Bur Marigold), are not common.

Menyanthes trifoliata, L. (Bogbean or Marsh Trefoil). The white flowers, with fringed petals, are remarkably beautiful. An infusion of the bitter leaves is used in rustic medicine as a stomachic. Frequent.

Iris Pseudacorus, L. (Yellow Flag). This plant possesses several features well worthy of attention—the underground stem, the structure of the leaves and their equitant venation, the petaloid style, and the arrangements to secure cross-fertilization. Common.

Of the genus *Carex* (Sedge) the following aquatic and marsh species may be mentioned:—*C. vesicaria*, L. One of our handsomest sedges, 1 to 2 feet high. Not common; Lochan Loisken near Dunoon, Loch Tay near Killin Pier. *C. ampullacea*, Good. Common. *C. limosa*, L. Not common; Kilmalcolm. *C. paludosa*, Good. *C. teretiuscula*, Good. Rare; Loch Libo. *C. laevigata*, Sm. Rare; Arran, West Kilbride. *C. aquatilis*, var. *Watsoni*, Syme. Lochwinnoch.

6. WOODS AND HEDGES.—Woods are not rich in flowering plants, for space and light are wanting. Where the trees are dense nothing grows under them except fungi; but in open places, and along the borders, several interesting species are found. In our hedges several handsome climbing species occur.

Anemone nemorosa, L. (Wood Anemone). Like the marsh marigold, the anemone has petaloid sepals. Common during April and May.

Ranunculus auricomus, L. (Wood Crowfoot, Goldilocks). Not common; Kilmalcolm, Craignethan Castle.

Stellaria Holostea, L. (Greater Stitchwort). A pretty white-flowered hedge plant.

Oxalis Acetosella, L. (Wood Sorrel). Some say this is the true shamrock.

Vicia sylvatica, L. (Wood Vetch). The finest of all our vetches, with large white flowers streaked with purple. Not common; Killin; Old Road, Bridge of Allan. *V. Cracca*, L. (Tufted Vetch). A very ornamental hedge plant.

Rosa canina, L. (Dog Rose). Ruskin says that the rose and the wood hyacinth are our supreme wild flowers. In the west of Scotland the roses begin to open about the longest day, so that our hedges are bright with them in the height of summer.

Cratogeomys Oxyacantha, L. (Hawthorn). The English name—May—for hawthorn blossom would not be appropriate in the west of Scotland, as it does not open till about the first of June.

The bramble, the raspberry, and the elderberry are all common; so are the honeysuckle, a woody twiner, and the ivy, which climbs by means of rootlets.

Campanula latifolia, L. (Broad-leaved Bell Flower), is not very common wild, but is such a tall, large-flowered, handsome species that it is planted in ornamental woods.

Asperula odorata, L. (Woodruff), so fragrant when dried, and *Primula vulgaris*, Huds. (Primrose), the sweetest of all our wild flowers, are both common in the woods.

Digitalis purpurea, L. (Foxglove). In open woods this is our most stately flower, but it suffers in popular estimation from being poisonous.

Scilla nutans, Sm. (Wild Hyacinth), carpets our woods with blue in the month of June.

The following four orchids may be reckoned wood plants:—*Epipactis latifolia*, Sw. (Helleborine). *Listera ovata*, L. (Twayblade). Frequent. *Goodyera repens*, R. Br. Rare in the west (Troon), but frequent in the north, as at Monymusk in Aberdeen and Castle Grant on Speyside. *Neottia Nidus-avis*, Rich. (Bird's Nest Orchis), so named from the nest-like appearance of the root, which is composed of stout interwoven fibres. This curious plant is a saprophyte; that is, it obtains its food ready prepared from the decaying vegetable matter among which it grows; for it lacks the green colouring matter called chlorophyll, and so cannot elaborate food for itself.

7. FIELDS AND WASTE PLACES. — The commonest flower in our pastures is the Daisy or Gowan (*Bellis perennis*, L.) Though abundant in Europe it is unknown in America except as an introduced plant. The tall buttercup of our fields (*Ranunculus acris*, L.) is very common, while *R. bulbosus*, L., so named from the ball-like base of the stem, is scarce in many districts.

Sinapis arvensis, L. (Charlock), is such a common weed in corn-fields that in early summer its blossoms make them yellow. At the coast it is often replaced by another kind of charlock (*Raphanus Raphanistrum*, L.) *Lychnis Flos-cuculi*, L. (Ragged Robin), and *L. diurna*, Sibth. (Red Campion), are very common; while *L. vespertina*, Sibth. (White Campion), which has little or no scent during the day, but is fragrant in the evening, is not common in the west of Scotland, though common enough in the east.

Geranium pratense, L. (Meadow Cranesbill). 3 feet high; leaves roundish, much divided; flowers large and beautiful, more than an inch in diameter, blue, inclining to purple. Frequent. *G. sylvaticum*, L. (Wood Cranesbill), grows in meadows as well as in woods. It resembles the last, but the leaves are not so much divided and the flowers are smaller and darker. This plant is interesting historically, for more than a hundred years ago it induced Sprengel to begin his famous investigations into the structure and fertilisation of flowers.

Ulex europæus, L. (Whin, Furze). The leaves of the Leguminosæ, to which this well-known bush belongs, are usually trifoliate or pinnate; but both the leaves and branches of furze are modified into spines. However, the first leaves of seedling plants are trifoliate. *Cytisus scoparius*, Link (Broom). Our most beautiful native flowering shrub. The leaves are few, but the whole plant is green, so the branches perform the functions of leaves.

Conium maculatum, L. (Hemlock). Easily recognised by its much-divided, carrot-like leaves, purple-spotted stem, and fetid odour, like that of mice; poisonous. Not common in the west of Scotland.

Aethusa Cynapium, L. (Fool's Parsley). A more slender plant than hemlock; fetid, but not spotted. Its best distinguishing mark is the involucre of very long bracts beneath each secondary umbel. Not common in the west. Another umbellifer may be mentioned—*Mertensia athamanticum*, Jacq. (Bald-money). A remarkable aromatic plant with beautiful dark-green leaves cut up into thread-like segments. The root is eaten in the Highlands. Upland pastures, Lochwinnoch, etc.

Tragopogon pratensis, L. (Goat's Beard). A composite with large heads of yellow flowers and long grass-like leaves. The flowers close up about mid-day, hence the English name of Jack-go-to-bed-at-noon. Not common.

Thistles. — Though the thistle is the national emblem of Scotland, yet England possesses more kinds of thistles than Scotland does. We have only three that are at all common—*Cnicus lanceolatus*, Hoffm. (Spear Thistle); *C. palustris*, Hoffm. (Marsh Thistle); and *C. arvensis*, Hoffm. (Corn Thistle)—while *C. heterophyllus*, Willd. (Melancholy Thistle), is not common. This stately plant has leaves of very different shapes, and was formerly used as a cure for hypochondria; hence its names. People often ask which species is the Scotch thistle. Prior in his 'Popular Names of British Plants,' says—'Probably, in the first place, any thistle indifferently, but at the present day *Onopordon Acanthium* and *Cordurus nutans*, L.' Sowerby also gives *O. Acanthium* (the Cotton Thistle), but remarks that it is rare and very doubtfully native in Scotland; and, further, that the Melancholy Thistle is said by some to have been the original badge of the house of Stuart.

Campanula rotundifolia, L. (Harebell). One of our most graceful July and August wild flowers.

Many species grow throughout the length and breadth of Scotland, while others have a narrower range of geographical distribution, some being confined to the north, some to the east, and so on.

1. PLANTS CHARACTERISTIC OF THE WEST. — The west of Scotland possesses a very varied surface consisting of island and peninsula, mountain and plain, moor, marsh, and meadow, sandhill, sea-cliff, and shingly beach. Yet with all these, and its moist, mild climate, the native flora is less rich and varied than that of the east coast. The plant most characteristic of the west coast is *Cerium verticillatum*, Koch, an inconspicuous umbellifer with a slender stem 1 to 2 feet high, and narrow, curiously-divided leaves. Abundant along the shores of the Firth of Clyde, and extending some miles inland.

Hypericum Androsæmum, L. (Tutsan). The handsomest of our native St John's-worts, 2 feet high, with large opposite leaves, which emit a curious smell on being rubbed. Sowerby says it is probably wild only in the west of Scotland and south of England. *H. elodes*, Huds. (Marsh St John's-wort). Rare in the west, and absent from the east; Arran, Tighnabruaich, Wigtown.

Cotyledon Umbilicus, L. (Wall Pennywort). A curious, succulent plant found near the sea, with circular leaves and a flower-stalk 9 inches high, covered with whitish drooping bells.

Jasione montana, L. (Sheep's Bit). One of the Campanulaceæ, but the small blue flowers being gathered into a dense head give it the appearance of *Scabiosa succisa*. Frequent in the west; not found in the east.

Campanula hederacea, L. (Ivy-leaved Bell-flower). Small, graceful, creeping. Rare; Dunoon, Cloch near Gourrock.

Scutellaria minor, L. (Lesser Skull-cap). A small, marsh plant found in the west from Kirkcudbright to Dumbarton, but rare.

Anagallis tenella, L. (Bog Pimpernel). Henedy in his 'Flora' truly says—'A very elegant little plant adorning the mossy bogs on which it grows.' Frequent; Cumbrae, Bute, etc.

Atroplex laciniata, L. (Frosted Sea Orache). A prostrate shore plant covered with white glistening scales. Much commoner in the west than in the east.

Scilla verna, Huds. (Vernal Squill). A small blue-flowered plant of the same genus as wild hyacinth. Found here and there on the west coast from Shetland to Wigtown and Kirkcudbright.

2. OF THE EAST.—Though the east of Scotland has a less varied surface than the west, it has a richer flora—like that of England, and this may probably be due to a land connection with the Continent in recent geological times. It has a less equable climate than the west, and in spring is scourged by a bitter north-east wind; but it has less rain, more sunshine, and a higher summer temperature. The difference of climate has a marked effect on vegetation—wheat harvest beginning a month earlier in East Lothian than in Renfrew.

Papaver Rhoas, L. (Corn Poppy). Abundant in the Lothians, but rare in the west, and rarer now than formerly. Hopkirk, in his 'Flora Glottiana' (1813), our earliest list of the plants of the Clyde district, says—'Among corn frequent;' and Patrick in his 'Plants of Lanarkshire' (1831), says—'Frequent in corn-fields.' Mr R. Turner, in his life of Hopkirk (*Transactions of the Natural History Society of Glasgow*, 1887), suggests that it is rarer now because corn is more carefully winnowed, and so poppy seeds are seldom sown. But when once in the district why did it not hold its ground? And why does it not spread gradually west? There is no barrier to prevent it. From this and other cases it appears that acclimatisation is a very slow process. In the west *P. dubium* is frequent.

Thlaspi arvense, L. (Penny Cress). So named from its large coin-like seed-vessels. Frequent in cultivated fields; North Queensferry.

Helianthemum vulgare, Gaertn. (Rock Rose). A pretty little undershrub with a fine yellow flower as large as a buttercup. The stamens when touched at the base fall outward. Common on Arthur's Seat. Reaches as far west as the centre of Scotland—Bridge of Allan; Valley of the Mouse, a tributary of the Clyde.

Geranium sanguineum, L. (Bloody Cranesbill). Found on the west coast, as at the Heads of Ayr beach. Much commoner in the east.

Astragalus glycyphyllos, L. (Milk Vetch). Stem 3 feet long, prostrate, flowers in axillary racemes. Cream coloured. Not common. *A. hypoglottis*, L. (Purple Milk Vetch). 4 to 6 inches high. Very common on the shore at Kirkcaldy.

Spirea Filipendula, L. (Dropwort). Both the specific and the English name are derived from the appearance of the roots—tubers or drops hanging by threads. A garden-like plant, but evidently truly wild. Dry pastures, North Queensferry.

Scandix Pecten-Veneris, L. (Venus's Comb). A curious little umbellifer with a history in the west like that of the poppy. Hopkirk says it is common in cultivated fields; and Patrick, common in corn-fields; whereas it is now all but unknown in the west, while it is frequent in the east.

Scabiosa (Knautia) arvensis, L. (Field Scabious). Common in the east, but rare in the west. *S. Columnaria*, L. (Small Scabious). Wanting in the west.

Centaurea Scabiosa, L. (Greater Knapweed). A very ornamental field plant, 2 feet high, with large purple flower-heads, the ray or fringe consisting of neuter florets. A west-country botanist visiting the east is sure to take this species away with him. Frequent; Gullane, etc. Very rare in the west.

Carduus nutans, L. (Musk Thistle). Frequent in the east, but very rare or wanting in the west.

Convolvulus arvensis, L. (Small Bindweed). Common in the east, rare in the west, but spreading.

Echium vulgare, L. (Viper's Bugloss). A tall hispid herb, with flowers at first red, then blue. Common.

Cynoglossum officinale, L. (Hound's Tongue). Fruit composed of four large nutlets covered with hooked spines. Frequent; Gullane, etc.

Hyoscyamus niger, L. (Henbane). 'A clammy, fœtid, poisonous herb. Uncommon; Fife, Gullane.

Atropa Belladonna, L. (Deadly Nightshade). Rare. This plant and Henbane are found as far west as Stirling.

Salvia Verbenaca, L. (Sage). Rare; Kinghorn.

Lamium album, L. (White Dead-nettle). Much commoner in the east than in the west.

Parietaria officinalis, L. (Pellitory of the Wall). Frequent; Inverkeithing, Castle Campbell, etc.

3. OF THE NORTH.—Two species, found only in the extreme north of Scotland, have already been mentioned—*Arenaria norvegica*, confined to the Orkney and Shetland Islands, and *Primula scotica* (Norwegian Primrose), found in Orkney, Caithness, and Sutherland. *Hierochloa borealis*, R. and S. (Holy Grass), a native of Northern Europe, was discovered by the late Robert Dick in the neighbourhood of Thurso. *Linnaea borealis*, Gronov., is found in several counties—Ross, Banff, Aberdeen, at Castle Grant in Inverness, Glen Doll in Forfar; also south of the Tay, but perhaps introduced. 'This genus of plants contains but one species, for which it was originally formed, and its interest consists in the fact that its name was given to it by Gronovius at the express desire of Linnaeus, who chose this humble plant to transmit his own name to posterity.' (Sowerby's 'Botany,' vol. iv.)

Trientalis europæa, L. (Chickweed-Winter-green). Found as far south as York, but much commoner in the northern half of Scotland. Natural Order, Primulaceæ. In the Linnean classification it is the only British plant in the class Heptandria.

4. OF THE SOUTH.—Many plants characteristically English extend some distance northwards into Scotland, such as those given in the list for the east coast. There are fewer of them in the west, but two or three found in the extreme south-west may be mentioned. *Ulex nanus*, Forster (Dwarf Furze), smaller in all its parts than the common furze, and flowering in autumn instead of spring. On the shores of Loch Ryan, Wigtownshire, it forms in places a sort of sward, covered in September with beautiful yellow flowers. This is the furze so common in the Isle of Man. *Ononis spinosa*, L. (Upright Rest-harrow), Kirkcudbright; *Rhamnus Frangula*, L., Kirkcudbright; *Carolina vulgaris*, L. (Carline Thistle), occurs at Burrow Head and also in Arran.

Trees.—Dr Johnson ('Journey to the Western Isles') says—'From the bank of the Tweed to St Andrews I had never seen a single tree which I did

not believe had grown up far within the present century. . . . A tree might be a show in Scotland as a horse in Venice.' Making allowance for humorous exaggeration, we know from other sources that there was much truth in the doctor's remarks. But so great a change has taken place in the surface of Scotland since Johnson's time, that in some parts of the Highlands, the extensive plantations of Scotch pine, *Pinus sylvestris*, L., form the most striking feature in the landscape. Much, however, yet remains to be done. Great tracts in the Highlands and Islands, well suited for the growing of trees, are still lying bare.

Perhaps the most remarkable single tree in Scotland is the Fortingall Yew in Perthshire. It is said to have been at one time 56 feet in circumference, and its age has been reckoned at 3000 years. The part that remains is still healthy, and may grow on for centuries.

At Craigends, Renfrew, is a fine yew with a trunk 21 feet 2 inches in circumference, and a spread of branches 81 feet in diameter.

Oaks do not grow to so great a size in Scotland as in England, but we have some good examples—as the Blairquhosh Oak, on the roadside near Strathblane, Stirlingshire; circumference at 3 feet 4 inches from the ground, 16 feet 9½ inches. This tree is mentioned in a charter dated 1493. It is also given in Professor Walker's Catalogue (1796). At Lee, Lanarkshire, is an oak 23 feet 7½ inches in girth. The trunk is now hollow. At Strathleven, Dumbartonshire, is a magnificent oak in good condition, 23 feet 5 inches at 2½ feet from the ground. Mention may also be made of Eppie Callum's Oak at Crieff. The Maple, *Acer pseudo-platanus*, L., attains a great size. One at Erskine (West Lodge) on the Clyde is 19 feet at 2 feet 3 inches up. Another at Logansraes, Barrhead, Renfrew, is 18 feet 1½ inch at 3 feet 6 inches up; spread, 88 feet. At Westburn, Cambuslang, near Glasgow, is one 16 feet 5 inches at 4 feet 3 inches up. At Ancrum House is a lime in perfect condition, 24 feet at 6 feet 4 inches up. Many other large trees might be mentioned.

BRITISH PLANTS NOT FOUND IN SCOTLAND.

In the section on mountains it has been shown that many plants which are natives of Scotland are not natives of England. It will now be shown, on the other hand, that many plants which are natives of England are not natives of Scotland. If a botanist from the Midland Counties of England were to visit the west of Scotland, he would be struck by the absence or rarity of many plants common in England. He would miss from our hedges *Clematis Vitalba*, L. (Traveller's Joy); *Bryonia dioica*, L. (White Bryony); *Tamus communis*, L. (Black Bryony); and see but rarely *Rhamnus catharticus*, L. (Buckthorn); *R. Frangula* (Black Alder); *Eunonymus europæus*, L. (Spindle Tree); *Acer campestre*, L. (Small-leaved Maple); *Viburnum Opulus*, L. (Guelder Rose); *V. Lantana* (Wayfaring Tree); and *Cornus sanguinea*, L. (Cornel). But few of these, even when they do occur, are indigenous. The two beautiful water plants—*Sagittaria sagittifolia*, L. (Arrowhead), and *Butomus umbellatus*, L. (Flowering Rush), are not natives of Scotland; and, as already stated, *Typha latifolia*, L. (Bulrush), is rare. *Arum maculatum*, L. (Lords and Ladies), is found near old castles; but Hooker says it is doubtfully wild in Scotland. *Paris quadrifolia*, L. (Herb Paris), so common in some parts of England, is one of our rare plants. *Primula veris*, L. (Cowslip), is not found in the west of Scotland except where it has been planted. *Narcissus Pseudo-narcissus*, L. (The Daffodil), has been extensively naturalized, and *Colchicum autumnale*, L. (Meadow Saffron), to a very small extent. *Convolvulus arvensis*, L. (Small Bindweed), so com-

mon in England as to be a troublesome weed, is rare in the west, but frequent in the district around Edinburgh. However, *Convolvulus sepium*, L. (Large Bindweed), is not uncommon in our hedges. Perhaps the greatest blank of all in our Scottish flora is the want of *Viola odorata*, L. (The Sweet Violet). It may be mentioned here that *Symphytum tuberosum*, L. (Tuberous Comfrey), one of our common Lowland plants, is rare in England.

(B) FLOWERLESS PLANTS.

Ferns.—It is difficult to say how many species we have in Britain, for, with respect to some forms, botanists are not agreed as to whether they should be called species, sub-species, or varieties. The London Catalogue, eighth edition, gives for the United Kingdom 20 genera and 50 species, besides varieties. Hooker's 'Student's Flora,' third edition, gives for the same area 17 genera and 38 species, besides sub-species and varieties. The following British species are absent from Scotland—*Trichomanes radicans*, Sw. (Killarney Fern), found several years since in Arran, but the station has been lost sight of; *Adiantum Capillus-Veneris*, L. (Maiden Hair); *Asplenium lanceolatum*, Huds.; *Nephrodium rigidum*, Desv., *Gymnogramme leptophylla*, Desv.; *Ophioglossum lusitanicum*, L.; and *Polypodium calcareum*, Sm. (sub-species). But we have in Scotland one species not found elsewhere in Britain—*Cystopteris montana*, Link, said by Moore to be the rarest of all British ferns. Perth, Forfar, Ben Loeigh in Argyll, and last summer (1894), found by A. Somerville, F.L.S., on Ben Lomond.

The following species are not common in Scotland—*Hymenophyllum tunbridgensis*, Sm. (Tunbridge Filmy Fern); *Cryptogramme crispa*, R.Br. (Parsley Fern); *Asplenium germanicum*, Weiss, very rare; *A. septentrionale*, Hull, very rare; *A. viride*, Huds.; *A. marinum*, L. (Sea Spleenwort), seaside caves, as at Loch Ryan, Drumadoun in Arran, Kintyre, etc.; *Ceterach officinarum*, Willd. (Scale Fern), rare, old walls; *Woodsia hyperborea*, R. Br., and *W. ilvensis*, R. Br., both very rare, wet rocks on mountains; *Polystichum Lonchitis*, Roth (Holly Fern), a mountain species; *Polypodium alpestre*, Hoppe (Mountain Polypody)—this species might be mistaken for the Lady Fern; *Nephrodium Thelypteris*, Desv., rare; *Osmunda regalis*, L. (Royal Fern), formerly frequent, but now being rooted out by dealers; *Ophioglossum vulgatum*, L. (Adder's Tongue), *Botrychium Lunaria*, Sw. (Moonwort). Only a few of our ferns are abundant—Bracken, Male Fern, Lady Fern, Common Polypody, Broad Buckler Fern, Heath Shield Fern.

Following the arrangement of Hooker in his 'Student's Flora,' we have in Britain, besides the ferns, 17 other species of vascular cryptogams, all of which (except *Isoetes Hystrix*, Dur.) are found both in Scotland and England—namely, *Lycopodium clavatum*, L. (Common Club-moss); *L. Selago*, L.; *L. alpinum*, L.; *L. annotinum*, L., not common; *L. inundatum*, L., rare, Sandhills, Kilwinning; *Selaginella selaginoides*, Gray, frequent in moors; *Isoetes lacustris*, L. (Quillwort), rare, bottoms of lakes. The sub-species *I. echinospora*, Dur., occurs in moorland pools near Tobermory in Mull; *Pilularia globulifera*, L. (Pillwort), rare, margins of lakes, Loch Lomond. *Selaginella*, *Isoetes*, and *Pilularia* are the only British genera of cryptogams that have spores of two kinds—large and small; *Equisetum maximum*, Lam. (Great Horse-tail), our largest horse-tail, 3 to 5 feet high, not common, Arran, Innellan, Largs, etc.; *E. sylvaticum*, L. (Wood Horse-tail), our most graceful species, common; *E. hyemale*, L. (Dutch Rush), not common;

E. pratense, Ehr., rare; *E. limosum*, L., common; *E. palustre*, L., common; *E. arvense*, L., very common; *E. variegatum*, Sch., rare.

Mosses.—On account of its moist climate, high mountains, great tracts of moorland, sand dunes by the seashore, and other physical features, Scotland is admirably fitted for sustaining a large moss flora. On the west coast, especially, they grow with great luxuriance; and many kinds usually barren, such as the larger *Hypnaceae*, are there found in fruit. The geographical distribution of our mosses resembles that of our alpine flowering plants, the same species being found both in Scandinavia and on our high mountains. The mosses of Britain have been carefully examined, and though doubtless many uncommon species will yet be found in new localities, it is highly improbable that many new species will ever be added to our lists. In the London Catalogue of British Mosses (1881), 568 species are enumerated, and of these 490 species are found in Scotland, many of which are not found in England. The principal district for rare species is Perthshire, especially Ben Lawers. The hills and moor in the south-west of Scotland are also prolific; and even the Campsie Hills, in the neighbourhood of Glasgow, yield several interesting species.

There are now several excellent Moss Floras, so that students are able to carry on their investigations satisfactorily, and increase our knowledge regarding the distribution of species.

Hepaticæ.—According to the London Catalogue, 1881, there are in Britain 192 species of Hepaticæ. How many of these are natives of Scotland we cannot say, as the group has not yet been carefully examined; the chief reason for this being that local botanists have been unable to give their assistance from the want of a Flora of the *Hepaticæ*.

It is within this group that the transition takes place from thallophytes to cormophytes, some species forming a flat expansion not differentiated into stem and leaf. Others have distinct stems and leaves like mosses.

Fungi.—Up till near the end of last century, Scottish botanists had paid so little attention to the study of fungi, that Lightfoot ('Flora Scotica,' 1777), describes only 73 species. But little advance was made during the next forty years, for Hooker ('Flora Scotica,' 1821) describes no more than 200. In 1823, Greville began to issue in parts his 'Scottish Cryptogamic Flora,' in which he described and gave beautiful figures of many species of fungi not previously observed. However, this did not awaken an interest in these curious plants, and for about forty years after Greville's time little attention was given to the study. In 1860 the eminent English mycologist, Rev. M. J. Berkeley, published his 'Outlines of British Fungology,' and subsequently such rapid progress was made that when Rev. Dr Stevenson, in 1879, published 'Mycologia Scotica,' he was able to enumerate no fewer than 2156 species that had been recorded as found in Scotland; and before the publication of his 'British Fungi,' in 1886, considerable additions had again been made.

A great impetus was given to the study of the non-flowering plants by the formation in 1874 of the Cryptogamic Society of Scotland. Every autumn this society holds, in some part of Scotland, a conference extending over several days, when excursions are made in search of cryptogams—special attention being given to the identifying and recording of fungi.

Occasionally there is also a show of cryptogamic plants. By these means the distribution of species is every year becoming better known. However, as Scotland is yet imperfectly explored, we may expect still to add to our lists many species of fungi, especially such minute kinds as grow on leaves and dead branches.

Though some species are found everywhere, yet certain districts are much richer than others. Special mention may be made of the neighbourhood of Forres and of Rothiemurchus, which have been carefully examined by Rev. Dr Keith, and where he has found many rare and curious species, such as *Trametes pini*, Fr.; *Polyporus Schweinizii*, Fr.; *Hydnum imbricatum*, L.; *H. scrobiculatum*, Fr., etc. The native pine woods of Rannoch also are rich in species, and so is the district around Glamis, where Rev. Dr Stevenson has discovered a large number of species new to Britain.

In Cadzow Forest, near Hamilton, where the wild white cattle graze, several large and uncommon species are found, such as *Fistulina hepatica*, Fr. (Beef-steak Fungus); *Polyporus sulphureus*, Fr.; *P. dryadeus*, Fr. In Cadder Wilderness, a large beech wood near Glasgow, *Agaricus virosus*, Fr., *A. platyphyllus*, Fr., and many other uncommon species have been found. At West Kilbride, Ayrshire, Mr D. A. Boyd has found *Geaster rufescens*, Fr. (Reddish Earth Star), *Hirneola auricula-Judæ*, Berk. (Jew's Ear), and *Mutinus caninus*, Fr., a plant that has been observed only three times in Scotland—in 1878 at the Edinburgh Cryptogamic Show, in 1880 at the Glasgow Show, and in 1885 at Crosbie, West Kilbride.

Much might be said regarding the species most remarkable for their rarity, beauty, or peculiarity, but limited space permits the mention of only a few:—*Agaricus campestris*, L. (the Common Mushroom), though cosmopolitan, is very variable in its occurrence; other edible species, such as *Hydnum repandum*, L., *Cantharellus cibarius*, Fr., *Lactarius deliciosus*, Fr., and *Coprinus comatus*, Fr., are much more constant.

Strobilomyces strobilaceus, Berk., was found for the first time in Scotland in the woods of Drummond Castle on the occasion of the visit of the Cryptogamic Society to Crieff in 1889, and has since been found at Dunkeld. *Tremellodon gelatinosum*, Pers., was first recorded for Scotland at Dumfries Fungus Show, 1883; and was next observed ten years later at Moffat, in the same county.

Lichens are now generally regarded as a section of the fungi, but are sufficiently distinct to be studied by themselves. They are very numerous, Leighton ('Lichen Flora of Great Britain,' 1879) describing 1710 species. And this number will probably be exceeded by Crombie in his new 'Lichen Flora' (2 vols.), one volume of which is already published. The lichens of Scotland are both numerous and interesting, but only a few botanists are studying them.

Algæ.—The Scottish coasts have as yet been only partially explored in search of Marine Algæ. The Clyde area is perhaps best known, having been examined by the late Rev. Dr Landsborough, the late Professor Kennedy, the late James Cook, David Robertson, F.L.S., and Mrs Robertson; and in 1891 and 1892 naturalists—both ladies and gentlemen—came down from London to Millport, under the auspices of the Committee for the Exploration of the Marine Flora of Western Scotland, and added nearly 100 species to the Clyde lists. The Aberdeenshire coast was explored by the late Professor Dickie. Much yet remains to be done in the Moray Firth and the Hebrides.

THE GEOLOGY OF SCOTLAND.

By B. N. PEACH, F.R.S.S.L. & E., F.G.S., and J. HORNE, F.R.S.E., F.G.S., of the Geological Survey of Scotland.

THOSE who have studied the geological history of Scotland will readily admit that there are ample materials in the records of the successive formations to arrest the attention and to stimulate research. During the 19th century numerous investigators have ransacked these ancient archives with remarkable success, and though there are certain questions requiring further elucidation, it is possible now to construct a tolerably complete account of the geological history of the country.

In presenting such a review, it is interesting to remember that the story of our hills and valleys, as well as of the strata of which they are composed, suggested to Hutton those principles which led to the true interpretation of the past changes of the globe. He is justly regarded, not only as the founder of the distinguished Scottish School of Geology which flourished towards the beginning of the century, but also as the real founder of physical geology. The views promulgated by Hutton and advocated with so much force and eloquence by Playfair, regarding the physical history of the rocks in the earth's crust, are now universally admitted. With the aid of the brilliant light which they cast on this branch of the science, we are able to follow and explain those geographical revolutions which our country witnessed ere it assumed its present features. It is no doubt true that Hutton did not take cognisance of the grand series of organic remains embedded in the successive formations, by means of which we are able to realise in some measure the climatic conditions of the successive periods and the gradual development of plant and animal life. The first step in this inquiry was reserved for his great English contemporary, William Smith. His researches among the Secondary rocks of England enabled him to establish a regular order of succession in the strata, and that particular zones were characterised by fossils peculiar to them. But notwithstanding the great achievements in different branches of the science since the time of Hutton, it is impossible to avoid expressing admiration for the services which he rendered to geological research and speculation. Recognising that the present is the key to the past, and that the geological agencies now in operation have been instrumental in bringing about changes during former periods, he placed geological reasoning on a sound scientific basis. He boldly suggested that the great bulk of the sedimentary rocks in the crust of the earth were formed of sand, clay, and gravel which had been deposited on the sea-floor, and that by subsequent pressure and subterranean heat they had been converted into sandstones, shales, and conglomerates. By means of the subterranean agencies they were elevated above the sea-level and had frequently been thrown into a series of great folds. He was also the first to show that granite and other crystalline rocks must originally have existed in a molten condition due to the action of heat, and that the molten material must have been injected in some cases in the form of veins into the surrounding sedimentary strata. He further contended that, under the influence of heat and pressure, sedimentary strata had been altered into various schistose rocks. By his brilliant researches it may be said that he advanced an explanation of the origin of the igneous, the sedimentary, and the metamorphic rocks of the earth's crust. But his observations led him to further

important deductions. In his rambles through Scotland he found that gently inclined strata rested on the upturned edges of an older series, from which he inferred that the members of the older series had been upheaved, contorted, and denuded prior to the deposition of the younger group. In this way he was led to contemplate former revolutions in the earth's surface, and to see that the history of these changes could only be deciphered by a study of the rocks in the field and their relations to each other. Finally, he maintained that the various physical features of the country—the hills and valleys, crags and ravines—had been sculptured by the action of rain, running water, frost, and other simple agencies of denudation, and that this decay was part of the economy of nature. He declared that the materials worn off the land were being transported to the sea by running water, where they accumulated, till at some future time they were consolidated into hard rocks and elevated above the sea-level, only to pass anew through the same series of changes.

It is perhaps not to be wondered at that views so startling and original met with keen opposition. Like many men of genius, Hutton was far in advance of his time. His principles, however, were adopted, with certain modifications, and expounded by Sir Charles Lyell, and they have more recently been eloquently enforced by Sir Archibald Geikie. They are now the common stock of geologists over the world. They have been briefly referred to here, in order that the general reader, who may have no special knowledge of the science, may follow more easily the remarkable history unfolded by the rocks of Scotland.

No better testimony could be advanced in support of Hutton's views regarding the powerful influence of denuding agencies in modifying the scenery of a country than the preceding article by Professor James Geikie, on the 'Leading Physical Features' of Scotland. It is clearly shown that the three great belts into which Scotland may be divided—namely, the Highlands, the Central Lowlands, and the Southern Uplands—coincide with the geological structure of the country, and that the features which they present have been moulded by agents of erosion. The mountains of the Highlands and the hills of the Southern Uplands have been carved out of table-lands of vast geological antiquity, their characteristic contours being due to the manner in which the respective rock formations have been influenced by denudation. It is apparent, therefore, that some knowledge of the geological structure of the country and the rock formations is essential before one can fully appreciate the evolution of its physical features.

A striking feature connected with the geological history of Scotland is the remarkable development of Palaeozoic rocks, compared with the relics of the Secondary formations. With the exception of certain limited areas of younger Palaeozoic strata, the Southern Uplands, extending from St Abbs Head to Portpatrick, are formed of rocks of Silurian age; the Central Lowlands are occupied by Old Red Sandstone, Carboniferous, and Permian strata; while the Highlands are composed mainly of crystalline schists, gneiss, and quartzites, the age of which it is impossible to define with certainty in the present state of our knowledge. The representatives of the Secondary formations occurring on the north-east coast, and also along the western seaboard of the Highlands, are mere fragments which have escaped

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denudation. They have been preserved to us partly by means of great dislocations which have brought them into conjunction with older strata, and partly by vast accumulations of Tertiary volcanic rocks which have overspread them and saved them from complete demolition. Notwithstanding these aids to their preservation, the record of the Secondary formations is by no means complete. Still, the deposits are of great interest and importance, as they enable the geologist to correlate them with the splendid development of

Secondary formations in England, and to trace the variations in the order of succession of the strata, as well as in the included fauna and flora. The Tertiary Period is represented mainly by an extraordinary development of volcanic rocks associated with certain leaf-beds, the whole series forming one of the most interesting chapters in the geological history of the country. The following table will enable the reader to grasp the chronological order of the rock formations, and to see wherein the record is defective:—

TABLE OF FORMATIONS IN SCOTLAND.

POST- TERTIARY,	{	RECENT and POST-GLACIAL,	{ Alluvium, peat, estuarine beds, raised beaches, torrential gravels, moraines of local glaciers.
		PLEISTOCENE or QUATERNARY,	{ Glacial, inter-glacial, and pre-glacial deposits, consisting of boulder clays, moraines, sands, gravel and clays, etc.
TERTIARY OF CAINOZOIC,	{	PLIOCENE,	Absent.
		MIOCENE,	{ Great development of contemporaneous and intrusive volcanic rocks, with associated leaf-beds.
		Eocene,	Absent.
SECONDARY OF MESOZOIC,	{	CRETACEOUS,	{ White chalk with flints. Upper Greensand. Gault—absent. Lower Greensand—absent. Wealden beds—absent.
			{ Upper Oolite. Middle Oolite. Lower Oolite.
		JURASSIC,	{ Upper Lias. Middle Lias. Lower Lias.
			{ Sandstones, cherty limestones, etc.
		TRIASSIC,	
PRIMARY OF PALÆOZOIC,	{	PERMIAN,	Sandstones, breccias with contemporaneous volcanic rocks.
		CARBONIFEROUS,	{ Red Sandstones. Coal-measures. Carboniferous Limestone. Calcareous Sandstone.
			{ Upper Division. Lower Division.
			{ Ludlow. Wenlock. Llandovery.
		SILURIAN—	{ Caradoc. Llandeilo.
			{ Arenig.
		CAMBRIAN,	Quartzites, Fucoid shales, and limestones.
		(TORRIDONIAN,	Gonglomerates, sandstones, black and grey shales, etc.
PRE-CAMBRIAN,	{	ARCHÆAN,	Gneiss, crystalline schists, limestone with pegmatite and granite veins.

In the North-West Highlands the oldest rocks of Scotland belonging to the Archæan series are characteristically developed. They occupy a belt of ground along the coast, stretching from Cape Wrath to Loch Torridon, and are to be met with in Rona, the north part of Raasay, Coll, Tiree, and the Outer Hebrides. Throughout these areas the rocks consist mainly of coarsely crystalline gneisses, with dykes, veins, and irregular masses of eruptive rocks. Formerly these gneisses were regarded as altered sediments, the planes of foliation representing the bedding planes. But the detailed examination of the Archæan areas along the western sea-board of Sutherland and Ross seem to point to the conclusion that they are largely, if not mainly, composed of gneisses, having marked affinities with Plutonic igneous rocks. Partly on account of their lithological characters, and partly because they were supposed to be overlain by Cambrian and Lower Silurian strata, these crystalline gneisses were regarded by Murchison as the equivalents of the Laurentian rocks of Canada.

They also received from him the local name Lewisian, from their great development in the Island of Lewis.

The detailed investigations of the Geological Survey have further proved that it is possible to separate the general complex of crystalline gneisses from certain intrusive rocks of later date. Throughout the general complex there is considerable variety in the lithological characters of the materials. Hornblendic, augitic, and micaceous gneisses predominate in different areas, associated with basic and ultrabasic rocks, such as gabbros, peridotites, and pyroxene granulites. Indeed, one of the peculiar features of the general complex is the occurrence of masses of these highly basic igneous rocks with little or no mineral banding, arranged as lenticular zones or belts, and running more or less parallel with the foliation of the gneiss. They are usually traversed by grey pegmatites or granitic material which frequently isolate portions of the basic rock. The relations of these pegmatites or granitic materials to the basic masses seem to be in accordance

with the general law affecting Plutonic rocks, that the more basic portions are older than the more acid. Hence the pegmatites in these instances may have been derived from the more acid portion of the igneous magma.

These amorphous masses of basic igneous rocks pass into massive gneisses in which the banding is faintly indicated by the orientation of the minerals. Quite recently (*Quart. Jour. Geol. Soc.*, 1894), Sir A. Geikie and Mr Teall have pointed out the close analogy between the mineral banding of these rocks and that of the eruptive gabbros of Tertiary age in Skye. They are inclined to believe that much of the banding of the old gneisses, as distinguished from foliation, may be an original structure due to the conditions in which the igneous magma was erupted and consolidated. But, though such may be the case, there is abundant evidence of the development of foliation planes by the mechanical deformation of the gneiss. There is still, however, some difficulty in separating the effects due to causes operating before or during the consolidation of igneous magmas, from those due to dynamic action acting on the rocks after consolidation.

After the development of the early foliation of the gneiss, the general complex was pierced by a remarkable series of igneous intrusions, chiefly in the form of dykes, of which the following are the most important—(1) basalt rocks, comprising dolerites; (2) peridotites; (3) granites. One of the striking features of the whole Archaean area in the North-West Highlands is the great abundance of these basic dykes in the region between Loch Laxford and Lochinver. They have been traced for ten or twelve miles from the west coast of Sutherland, across the Lewisian gneiss, till they are buried underneath the pile of Torridon sandstone and Cambrian quartzites. Only a few of the dykes show the prismatic arrangement of the columns at right angles to the walls, but in all cases the outer zones are more fine-grained than the centre. Between Lochinver and Kylesku their general trend is WNW and ESE, while between Kylesku and Loch Laxford it is more northerly. The intrusive dykes of granite or syenite, often foliated, are specially numerous between Loch Stack and Loch Laxford, and they are likewise met with in the region north to Cape Wrath. In these areas the granite veins are associated with pegmatites, which sometimes run parallel with the granite bands for long distances. In some cases portions of the dykes have been completely isolated by the pegmatites.

After the intrusion of these igneous materials the whole area was subjected to dynamic action, which profoundly affected the basic dykes and the older gneiss. Along the lines of movement various effects have been produced on the basic dykes. By means of enormous pressure the dolerites have been reconstructed, the felspars have become turbid, and the augite is replaced by hornblende, recognisable in the field by its cleavage angle. This molecular arrangement has been carried so far that much of the existing rock is in reality an epidiorite rather than a dolerite. A further stage of change is indicated by the gradual breaking down of the central or other portion of the dyke into lenticles, the surrounding mass merging into hornblende schist. These interesting phenomena may be studied in detail between Scourie and Kylesku, where the lines of movement or crush-lines cross the dykes obliquely. In such instances the dykes are deflected from their normal course; the horizontal displacement sometimes amounts to a quarter of a mile, and dykes from 50 to 60 yards across are reduced to bands 4 feet wide in the crush-lines. The divisional planes developed in the hornblende schist are vertical, or highly inclined, and in some cases nearly horizontal.

The influence of these movements on the older gneiss is also apparent. Near these disruption lines the older gneiss may be folded and highly inclined—the folia are attenuated, and there is a partial reconstruction of the rock. Where the change has been most marked, a second foliation has been produced which may or may not coincide with the older foliation; the rock has been granulitised and new minerals have replaced the old. Micaceous gneiss often becomes granulitic, hornblende replaces augite, and quartz veins often appear. There is, however, the clearest evidence for maintaining that the terrestrial movements indicated by the foregoing data had been completed before the deposition of the overlying Torridon sandstone. Not one of these lines of disruption that deform the intrusive dykes and older gneiss ever penetrate the overlying Torridon sandstone and Cambrian quartzites.

Attention must now be directed to an interesting group of rocks in the Archaean area in the west of Ross-shire, which may possibly be of sedimentary origin. Consisting of brown mica-schist, quartz-schist, graphite-schist, and limestone, they are strikingly developed on the north shore of Loch Maree, in the neighbourhood of Letterewe, and also in the district of Gairloch. The graphite occurs in thin bands in the mica-schists, and the crystalline limestones are sometimes charged with minerals, indicating contact metamorphism. It is interesting to note that lithologically this series resembles some of the altered sedimentary rocks in the Eastern Highlands, while some of the schists are not unlike the quartzose mica-schists of the Moine series to the east of the line of the great post-Cambrian terrestrial movements. This Letterewe series not only rests upon a platform of crystalline gneiss, but is visibly overlain by gneiss with intrusive dykes. It is likewise associated with a prominent sheet or band of hornblende schist forming the serrated peaks of Ben Lair and Ben Aridh da Char. Frequently along the line of junction of these schists with the crystalline gneiss there is evidence of movement with deformation, so that the actual relations of the two have not been placed beyond doubt.

In the north-west of Sutherland, between Durness and Loch Laxford, the surface of the old gneiss has been worn down to a comparatively level plane, but further south in Assynt, and onwards to Loch Torridon in Ross-shire, it has been carved into a series of deep, narrow valleys with mountains rising to a height of about 2000 feet. This remnant of Archaean topography is grandly displayed in the wild mountainous region extending from Loch Maree to Little Loch Broom. On the south-east slope of Ben Slioch, the observer may climb one of these Archaean mountain slopes, and note how the local breccia of hornblende schist is interleaved with the coarse grits of the Torridon sandstone. These deep valleys, once buried under a vast pile of Torridon sediment, which is now being gradually removed by denuding agencies, indicate prolonged denudation of the old Archaean land surface in pre-Torridon time.

Torridonian.—Resting with a violent unconformability on the platform of Lewisian gneiss, there is a noble development of sandstones and conglomerates, forming some of the most picturesque mountains in the North-West Highlands. Few observers who have seen these mountains will fail to recall the graphic descriptions by Hugh Miller (*The Old Red Sandstone*, 1879, pp. 53 and 529), who included them in the domain of the Old Red Sandstone. That this view was erroneous, was clearly proved by the independent observations of Professor Nicol and Sir Henry James. They showed that the red sandstones were overlain unconformably by the succeeding quartzites and fossiliferous limestones, and hence the former must be of

older date. No fossils have as yet been found in this system. Murchison regarded them as the equivalents of the Cambrian rocks of Wales, from the discovery of what were believed to be Lower Silurian fossils in the Durness limestones. But the recent detection of Lower Cambrian trilobites in the Fucoid shales between the quartzites and Durness limestones proves that the Torridon sandstone must be of pre-Cambrian date.

Recent investigations by the Geological Survey have shown that the Torridon sandstone is divisible into three groups—a lower, comprising epidotic grits and conglomerates, dark-grey and black shales with calcareous bands, mudstones and greywackes with Red Sandstones and grits; a middle, composed of coarse false-bedded grits with pebbles of quartzite, quartz-schist, felsite, jasper, gneiss, etc.; an upper, containing chocolate-coloured sandstones, micaceous flags with dark-grey and black shales, and calcareous bands. Where best developed, in the west of Ross-shire, it reaches a thickness of about 10,000 feet. The members of the lower group, which may eventually prove fossiliferous, are well displayed on the shore at Diabaig on Loch Torridon, and on the east coast of Raasay near Brochel Castle.

From the wild headlands of Cape Wrath to Applecross the representatives of the Torridonian system can be traced, forming pyramidal mountains of great height. They were called by Nicol the Torridon sandstone, from the great development of them in the mountains round Loch Torridon. They reappear to the east of the great line of terrestrial movement, notably in Sleat, and from Lochalsh to Loch Kishorn, where they exhibit traces of schistosity produced by the dynamic action to which attention will be directed in a subsequent paragraph.

Cambrian.—The Torridon sandstone is overlain unconformably by an important development of fossilifer-

ous strata, comprising quartzites, Fucoid shales, and limestones, which have become widely known ever since the discovery of fossils in the latter by Mr C. W. Peach in 1854. They extend continuously from Eriboll on the north coast of Sutherland to Skye, a distance of 90 miles. Sometimes they rest on the denuded edges of the Torridon sandstone, and sometimes on a platform of Archaean gneiss; hence it is evident that prior to the deposition of the Cambrian sediments the Torridon sandstone and the Archaean floor must have been elevated and exposed to considerable denudation. Indeed, the surface must have been reduced to a comparatively level plane, thereby differing in one important particular from the trenched Archaean land surface in pre-Torridon time. The discovery of Lower Cambrian trilobites, belonging to the *Olenellus* zone in the Fucoid shales has been of the utmost importance in fixing the stratigraphical horizon of these beds (*Quart. Jour. Geol. Soc.*, vol. 48, p. 227; vol. 50, p. 661). This fossiliferous zone rests on the quartzites and passes upwards into a series of limestones, which at Durness reach a thickness of about 1500 feet. The original upper limit of these Cambrian strata has been obscured by the dislocations affecting that region in post-Cambrian time. In the neighbourhood of Durness the limestones are divisible into several zones, some of which are highly fossiliferous. They have yielded chambered shells, gasteropods, lamellibranchs, brachiopods, sponges, etc. The assemblage of fossils is so peculiar that it has not been possible to correlate the beds with the Cambrian rocks of Wales. They seem to be the equivalent portion of the Cambrian and probably of the base of the Lower Silurian rocks of North America.

The sequence of strata from the Archaean gneiss to the highest visible member of the Cambrian formation, described in the foregoing paragraphs, may be arranged in the following tabular form:—

CAMBRIAN,	{	5. Great series of limestones with fossiliferous zones, typically developed at Durness.
		4. Serpulite grit, crowded with <i>Serpulites Maccullochii</i> (Salterella), especially in the decomposed portions, and yielding fragments of <i>Olenellus</i> .
		3. Fucoid beds, calcareous mudstones, dolomitic bands, and shales, traversed by numerous worm-casts with well-preserved specimens of <i>Olenellus</i> near the top.
		2. Fine-grained quartzites with vertical worm-casts and burrows (pipe rock).
		1. False-bedded grits and quartzites.
UNCONFORMABILITY.		
TORRIDONIAN,	{	(Upper Group)—Chocolate-coloured and red sandstones and grey micaceous flags, with dark and black shales, green and grey shales.
		(Middle Group)—Great series of coarse false-bedded grits and sandstones, with pebbles of quartzite, quartz-schist, felsite, jasper, gneiss, etc.
		(Lower Group)—Hard red sandstones and grits, greywackes, red mudstones, dark-grey and black shales with thin calcareous bands.
PRE-CAMBRIAN, {	{	UNCONFORMABILITY.
		General complex of crystalline gneisses and schists, with intrusive igneous rocks, chiefly in the form of dykes. They contain a series of mica-schists, graphite-schists, and limestones near Loch Maree, which may be of sedimentary origin.
ARCHAËAN or LEWISIAN,		

The fossiliferous strata, comprising quartzites, Fucoid beds, and limestones, extending from Loch Eriboll to Skye were believed by Murchison to pass conformably upwards into the Eastern schists which at certain localities visibly overlie the fossiliferous strata. Hence he inferred that the Eastern schists were younger than the fossiliferous limestones of Durness. On the other hand, the late Professor Nicol maintained that there is no conformable passage from these limestones into the overlying schists, and that the latter are of Archaean

age. Since these conflicting views were first announced about thirty years ago, the order of succession of the strata in the North-West Highlands has been one of the most keenly controverted questions in British geology. The researches of Professor Lapworth, Mr Callaway, Professor Bonney, and others, clearly showed that the Archaean rocks were made to overlie the fossiliferous rocks by means of overthrust faults. From the researches of the Geological Survey, it is now frankly admitted that there is no evidence in favour of a con-

formable upward succession from the fossiliferous limestones into the overlying crystalline schists. The detailed examination of the region proves that the rocks have been affected by one grand series of terrestrial movements which have produced great displacements of the strata. This dynamic action superinduced new structures in the rocks lying to the east of the undisturbed areas. (*Nature*, vol. xxxi. p. 29, 1884; *Quart. Jour. Geol. Soc.*, vol. 44, p. 379.)

In order to realise the nature of these displacements attention may be directed to the geological structure of the region between Durness and Eriboll. In the neighbourhood of Durness the Cambrian strata form a basin, the greater part of which is occupied by the limestone series. It is bounded on the east side by a powerful fault that brings them in contact with the Archæan gneiss, forming a prominent ridge of high ground extending from Rispond, at the mouth of Loch Eriboll, south by Ben Spionnu, Ben Arkle, and Ben Stack. On the west side of the basin, the basal quartzites rest unconformably on the Archæan gneiss owing to the removal of the Torridon sandstones in pre-Cambrian time by denudation. As the observer crosses the basin from west to east he meets with an ascending series from the basal quartzites through the 'Fuclid beds' and 'Serpulite grit' to the limestones, which are overlain in Sangomore Bay by crystalline schists and gneiss. Though occupying a limited area in this bay and at Farrid Head, these schists are found again far to the east on the ridge between Eriboll and Tongue.

The Cambrian strata at Durness were originally continuous with those at Eriboll, but by means of dislocations the former slipped downwards for several thousand feet, and were disconnected from the latter. On the west side of the loch the Archæan gneiss is overlain unconformably by the basal grits and the quartzites pierced with annelid burrows known as the 'pipe rock'; whilst on the east shore, near Eriboll House, they are followed by the 'Fuclid beds,' 'Serpulite grit,' and the lowest limestone zones. Advancing eastwards it is observable that the strata are repeated by a remarkable series of folds and reversed faults, the effect of which is to bring lower over higher beds. The admirable sections along the coast from Whiten Head to Heilim furnish excellent opportunities for studying the effects of this peculiar system of faulting. The Cambrian strata, ranging from the quartzites to the lowest limestone zone, are repeated again and again, till at the base of Ben Arnaboll the Archæan gneiss is brought up by a great reversed fault, and is seen resting on the quartzites and limestones. In other words the Cambrian strata have been disrupted, and a slice of the old platform of gneiss on which they lay has been thrust upwards and driven horizontally forwards so as to lie like a cake on the fossiliferous rocks. It is obvious that this structure cannot be accounted for by a simple inversion, as if we were to fold a pile of carpets back on themselves. It is no doubt true that the initial stage was sometimes characterised by the development of folds, but this movement gave place to reversed faults, and these again culminated in great horizontal displacements, which, for the sake of convenience, have been termed *Thrust-planes*.

These mechanical movements exercised a powerful influence on the Cambrian strata and on the Archæan rocks. The quartzites and other fine-grained Cambrian beds have been cleaved, the strike of the cleavage planes being parallel with that of the thrust-plane. In certain places the quartzites assume the character of quartz-schists, owing to the development of mica along the cleaved surfaces. Near the thrust-plane the Archæan

gneiss has been converted into a green slaty schistose rock, and, what is still more remarkable, new divisional planes have been developed parallel with that of the thrust-plane. At various localities patches of the lowest zone of Cambrian quartzites rest unconformably on this mass of Archæan gneiss, which, however, are traceable for no great distance, as they are abruptly truncated by reversed faults. Further east, another thrust-plane supervenes and ushers in a series of strata presenting striking proofs of having been affected by these mechanical movements. Gently inclined to the east-south-east, and with a prevalent north-north-east strike, the following order of succession has been established in these beds:—(1) Striped fissile schist, with occasional wedges of Cambrian quartzite next the thrust-plane; (2) green schist with intercalations of Archæan gneiss, containing patches of Silurian quartzites and limestone; (3) frilled schists with calcareous bands; (4) silicious schists; (5) hornblende and micaceous gneiss, probably Archæan; (6) grey flaggy micaceous gneiss, with occasional bands of garnetiferous mica-schist, hornblende-schist, and actinolite-schist. Of these various subdivisions, the last seems to cover wide areas in the counties of Ross and Sutherland. The foregoing order of succession is also traceable in Sangomore Bay and at Farrid Head in the Durness area, though the relations of the beds have been disturbed by normal faults. The inference is obvious, therefore, that this schistose series has been pushed westwards for a distance of 10 miles along the surface of the upper thrust-plane. This conclusion is so startling at first that one almost refuses to believe the evidence, but similar extraordinary displacements of the strata have recently been demonstrated by Heim in the Alps. A careful examination of the strata overlying this thrust-plane reveals certain peculiar features due to these mechanical movements. The original north-west strike of the Archæan gneiss has been almost wholly obliterated, and new planes of schistosity have been superinduced parallel with that of the thrust-plane. The quartz and felspar of the pegmatites have been elongated in a north-north-east and south-south-west direction, so that the rock, in its most highly altered form, presents a marked fluxion structure indistinguishable from that of certain lavas. Gneiss has been converted into schist, and even the quartzites merge into quartz-schists. The surfaces of the striped schist, quartz-schist, and flaggy gneiss alike possess a peculiar lineation like slickensides trending in one common direction, namely east-south-east to west-north-west. Additional evidence might be adduced of the effects of these terrestrial displacements, but it will be sufficient for our present purpose to refer to the deformation of the Torridon sandstone. In Assynt and Ross-shire the displaced masses of Torridon sandstone assume a schistose character, accompanied by the development of mica on the planes of foliation. Veins of quartz and felspar traverse the displaced sandstone, evidently segregated from the sedimentary rocks during the movements. Now it ought to be clearly borne in mind that the Torridon sandstones lying to the west of the lines of movement possess none of those schistose features; they are ordinary grits and sandstones, but where they have been subjected to mechanical movement, on the east side, the characters are wholly different.

From these observations it is apparent that in the north-west of Scotland the Archæan rocks, Torridon sandstones, and Cambrian quartzites have undergone an extraordinary amount of mechanical movement, resulting in the formation of new planes of schistosity, which are usually parallel with the planes of thrust. There has been a rearrangement of the constituents accompanied by the development of new minerals. All

these new structures are more recent than the Cambrian rocks of Sutherland, because the latter have shared in them, and they are older than Old Red Sandstone time, since the basal conglomerates of this formation contain pebbles of the Sutherland schists.

It is a question to be decided by future investigation how far the metamorphic rocks of the Central and Eastern Highlands have been affected by these movements. At present it is difficult to form definite conclusions regarding the origin of many of the crystalline schists lying to the east of the great lines of displacement in Sutherland and Ross. In the neighbourhood of Strome Ferry lenticular areas of deformed Torridon strata have been observed, in the course of the geological survey of that region, which are bounded on either side by reconstructed Archaean rocks. It is not improbable, therefore, that representatives of the Torridon formation may form an integral portion of the eastern schists. From the north coast of Sutherland to Loch Broom and Strathcarron, a belt of strata, of remarkably uniform character, has been traced, which may in part represent altered sedimentary rocks. They consist of flaggy quartzose mica-schists or 'gneissose flagstones,' with occasional thin partings of biotite schists. Portions of Archaean gneiss are associated with these schists in narrow zones or broad masses, displaying in some instances the pre-Torridonian structures. Indeed it is evident that throughout the region eastwards to the Great Glen and the valley of the Spey, there is a wide distribution of flaggy granulitic quartzose gneiss or schist and well-banded biotite gneiss with hornblende schist.

In the mountainous region stretching from Banffshire and Aberdeenshire to Argyllshire there is a splendid development of metamorphic rocks, largely composed of altered sedimentary strata. The stratigraphical horizon of this series has not as yet been fixed, but recent research has thrown some light on the age of some of the rocks. In Perthshire, Forfarshire, and Kincardineshire, the following arrangement of the strata is met with as the observer passes northwards from the Highland border. Near the great fault bounding the metamorphic rocks, from Stonehaven to the Firth of Clyde, there is a narrow belt of comparatively unaltered strata, which in places are not more altered than the Silurian rocks of the South of Scotland. They consist of red and grey cherts associated with igneous rocks, black shales with a thin band of limestone, pebbly grits, and greywackes. Northwards they are succeeded by massive grits, conglomerates, and schists (Ben Ledi), garnetiferous mica-schists, and the Loch Tay limestone; while still farther north they are followed by garnetiferous mica-schist, calcareous sericite schist with epidiorite and hornblende schist, graphitic schist, quartzite (Ben-y-Gloe), and the Blair Athole limestone and black schist. The researches of the Geological Survey have shown that the sequence in the comparatively unaltered strata near the Highland border closely resembles that of the Arenig and Lower Llandovery rocks of the South of Scotland. In the latter region, the oldest visible strata consist of volcanic rocks overlain by cherts charged with radiolarians, black shales, greywackes, grits, and shales. Near the Highland border radiolarians have been observed in the cherts associated with igneous rocks, and certain markings resembling graptolites have been found in the black shales. It is reasonable, therefore, to infer that these strata may represent the Arenig and some of the overlying strata of the South of Scotland. Equally interesting are the suggestive references to the rocks in Islay in the Annual Report of the Geological Survey for 1893. There, a series of rocks occur which resemble in some respects the succession

in the north-west Highlands. In the south-west of the island there is a development of gneissose rocks, recalling the deformed Archaean masses in the counties of Sutherland and Ross. These are overlain, apparently with an unconformable junction, by conglomerate, slates, reddish grits, and greywackes resembling sub-divisions of the Torridon sandstone. Farther east these are succeeded by slates and limestones, conglomerates, quartzites, dolomitic shales, and dolomitic limestones, the true relations of which are not yet definitely known. The quartzites contain in places worm-casts like those of the Cambrian quartzites of Sutherland, and the dolomitic shales possess flattened worm-casts like those of the Cambrian Fucoid beds. No further fossil evidence has been obtained to define the age of these rocks, but the general sequence bears a close resemblance to that of the Cambrian rocks of the North-west Highlands. The quartzites of Islay and Jura have generally been regarded as the prolongations of those in Perthshire, and it is probable therefore that the detailed examination of the strata in Islay and adjoining regions may throw light on the age of the strata in the Central Highlands.

At various localities in the Central and Eastern Highlands the slates merge into mica-schists containing andalusite, chiolite, staurolite, kyanite, sillimanite, and actinolite, mainly induced by contact metamorphism. Various references have been made to the chief mineralogical localities among these crystalline rocks in the articles on the geology of the northern counties. It is therefore unnecessary to call further attention to them beyond the statement that the prolonged researches of Dr Heddle clearly show that the localities where crystalline limestones, hydro-mica schists, serpentines, and epidiorites occur are usually the best for yielding minerals. Among these localities Portsoy, Glen Urquhart, and Grantown are justly celebrated.

The crystalline schists of the Highlands are pierced by two distinct types of igneous rocks, namely a basic and an acid series. The former type, represented by gabbro, epidiorite, mica-diorite, etc., is the older of the two; it occurs mainly in the form of sills or sheets running along the bedding planes, and the materials are foliated in part. The gabbro becomes schistose, and the epidiorite merges into hornblende schists. These basic rocks are prominently developed in the counties of Banff, Aberdeen, Perth, and Argyll, and various isolated though smaller areas occur farther to the north-west, where the lines of foliation of the igneous sheets are more or less parallel with the foliation of the mica-schists and grits. The acid intrusive rocks are represented by granites, some of which are foliated or gneissose. The latter variety may probably be older than the massive non-foliated granites that cover large areas in the Eastern Highlands. Recent researches in the course of the Geological Survey of the Eastern Highlands, and in the east of Sutherland, seem to point to the conclusion that the metamorphism of the schists is probably connected with the introduction of acid igneous materials into the sedimentary strata. Zones of contact minerals are associated with these acid rocks; the most extreme change being represented by sillimanite gneiss, while kyanite and andalusite are farther distant from the intrusive masses. Further research may throw light on the relative potency of the great non-foliated eruptive granites and the foliated acid rocks in producing the present crystalline characters of the schists. Regarding the age of the granite masses, it is highly probable that most of them are older than the Old Red Sandstone, because the basal conglomerates of the latter formation at certain localities are mainly composed

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of granite pebbles and granitic detritus. On the other hand it is not improbable that some of the granitic rocks may have been erupted during the period of volcanic activity in Lower Old Red Sandstone time. The suggestion made by Professor Judd that the granite mass of Ben Nevis, capped with dark grey and pink felsite and andesite, is connected with this era of vulcanicity may prove to be correct, as it is not far distant from the Old Red Sandstone lavas of Lorne.

From the foregoing observations it is apparent that the metamorphic rocks of the Central and Eastern Highlands form a great complex, comprising representatives of different geological formations, ranging from the Archæan to the Silurian. For the most part they possess a common foliation affecting alike the older igneous masses and the schists. Sir A. Geikie has proposed to call the metamorphic sedimentary series of the Eastern Highlands *Dalradian*, after the old Celtic kingdom *Dalriada*, as a provisional term, till the sequence and relations of the rocks are satisfactorily determined.

Silurian Rocks of the South of Scotland.—Throughout the Southern Uplands there is a great development of the representatives of the Silurian system. Arranged in a series of parallel folds, the axes of which run in a

north-east and south-west direction, the strata are repeated over wide areas. Frequently the folds are isoclinal, both limbs of the fold dipping in the same direction, and hence mere superposition of the strata is of no value in determining the order of succession. Owing to innumerable plications, often inverted and accompanied by reversed faults, the geological structure of the Southern Uplands is extremely complicated. Various solutions have been advanced of the apparent anomalies connected with the stratigraphy and palæontology of the region. To Professor Lapworth, however, belongs the merit of having furnished a key to unravel the geological structure of the Old Silurian tableland. His classic papers ('The Moffat Series' and 'The Girvan Succession,' *Quar. Jour. Geol. Soc.*, vol. 34, p. 240, and vol. 38, p. 537; 'The Ballantrae Rocks of the South of Scotland, and their place in the Upland Sequence,' *Geol. Mag.*, 1889), embodying the results of his researches extending over many years, demonstrated beyond all doubt the true order of succession of the strata based on the vertical distribution of the graptolites. They occur mainly in certain black shale bands, typically developed in the neighbourhood of Moffat, where by the exhaustive researches of Professor Lapworth they have been grouped in the following divisions:—

LLANDOVERY,	BIRKHILL DIVISION, . . .	UPPER,	Grey shales with dark seams yielding <i>Rastrites maximus</i> , <i>Monograptus turriculatus</i> , <i>M. Becki</i> , etc.
		LOWER,	Black and grey shales, with clays and mudstones, containing <i>Monograptus spinigerus</i> , <i>M. tenuis</i> , <i>M. Clingani</i> , <i>Diplograptus cometa</i> , etc.
BALA OR CARADOC,	HARTFELL DIVISION, . . .	UPPER,	Black shales with lines of clays with <i>Monograptus gregarius</i> , <i>M. lobiferus</i> , etc.
		LOWER,	Hard black flags and shivery shales yielding <i>Diplograptus vesiculosus</i> , <i>D. acuminatus</i> , etc.
LLANDILO,	GLENKILN DIVISION, . . .	UPPER,	Soft green shales with seams of black and white mudstones, <i>Dicellograptus anceps</i> , <i>Climacograptus bicornis</i> , <i>Diplograptus truncatus</i> .
		LOWER,	Barren mudstones with no fossils. Hard black shales with seams of white mudstones, <i>Pleurograptus linearis</i> , <i>Amphigraptus divergens</i> , etc. Hard black flags and slaty shales, <i>Dicranograptus Clingani</i> , <i>Siphonotreta micula</i> , <i>Dicellograptus moffatensis</i> , etc. Flaky shales and mudstones, <i>Climacograptus Wilsoni</i> , <i>C. bicornis</i> , etc.
		UPPER,	Pyrinitous slaty black shales and shivery mudstones, <i>Didymograptus superstes</i> , <i>Cœnograptus gracilis</i> , <i>Diplograptus dentatus</i> , <i>Thamnograptus typus</i> .
		LOWER,	Ribbed mudstones and flags (Radiolarian cherts, partly of Arenig age).

The sequence of the graptolites, and the physical relations of the strata, are admirably displayed in the Dobbs Linn section, about 12 miles from Moffat, near St Mary's Loch. Throughout the Moffat region, and indeed along the central portion of the chain from St Abb's Head to the Mull of Galloway, the Moffat black shale series form boat-shaped areas, surrounded by younger strata. They come to the surface along anticlinal folds, often inverted and truncated by reversed faults, due to intense lateral compression of the beds. In the central portion of the chain the representatives of the Birkhill black shales pass conformably upwards into a thick group of grits and greywackes, shales, and flagstones (Gala group, Queensberry grits), containing *Retiolites Geinitzianus*, *Monograptus priodon*, succeeded by brown-crusts greywackes, flags, and shales, charged with *Protovirgularia*, *Crossopodia*, and other tracks (Hawick rocks, Ardwell group of Dumfriesshire and Galloway).

Indeed the Llandoverly rocks occupy a broad belt of the Southern Uplands from 20 to 24 miles in width, stretching from the vale of Tweed to Eskdalemuir. This extensive development is owing to the rapid reduplication of the strata by folding, so that in spite of the high angles of dip the beds are made to cover as much space as if they were flat. A glance at the geological map of Scotland by Sir A. Geikie, recently published, shows the limits of this Llandoverly area. A line drawn from Glenluce by Dalry, Tweedsmuir, Peebles, to the northern slopes of the Lammermoors, marks the northern limit of the Llandoverly strata; while on the south side they are bounded by Wenlock and Ludlow rocks stretching from the mouth of the Dee near Kirkcudbright by Lockerbie to Riccarton, where they are unconformably overlaid by younger Palæozoic strata.

A careful examination of the various arches of the Moffat black shale series, between Dobbs Linn near

Moffat and the vale of Tweed, shows that some of the zones of the Birkhill group gradually disappear. In the Hartfell anticline, for example, as proved by Professor Lapworth, the highest zone of the Birkhill shales is no longer met with, and when traced still farther north, the representatives of this group have thinned away to a few feet of strata, containing *Diplograptus vesiculosus* and *Monograptus gregarius*. In like manner, when the Moffat shales are followed to the south-east towards Ettrick-Bridge-end, there is a gradual modification of the strata from the Moffat type. Grits, greywackes, and shales are intercalated in the higher portion of the Hartfell group, their horizon being defined by the occurrence of the barren mudstones below, and the lower Birkhill black shales overlying them. These variations from the Moffat type become still more marked in the northern area between Leadhills and Leadburn.

The recent researches of the Geological Survey in this northern area have proved that the group of volcanic rocks so typically developed in the neighbourhood of Ballantrae, Ayrshire, are exposed along numerous arches of representatives of the Moffat series in the district so far removed as that between Leadhills and Leadburn. They have further shown that this volcanic zone is everywhere overlain, as in Ayr-

shire, by a zone of cherts and mudstones charged with upwards of twenty species of Radiolaria. The horizon of this volcanic zone has been proved in Ayrshire by a lenticular band of black shales yielding Arenig graptolites, *Phyllograptus typus*, *Tetragraptus quadriranchiatus*, etc., occurring near the top of the volcanic series and underneath the radiolarian cherts. It is evident, therefore, that the underlying lavas, tuffs, and agglomerates must be of Arenig age, and it is probable that the overlying cherts may belong partly to Arenig and partly to Llandeilo time. In the northern area the radiolarian cherts, as in the Moffat region, pass upwards into the Glenkiln black shales with Llandeilo graptolites. Though the Arenig volcanic rocks along the northern margin of the tableland form small boat-shaped areas at the surface, it is apparent that they must underlie the Llandeilo strata over a tract of probably about 2000 square miles; for throughout the region extending from Ayrshire to Midlothian and southwards to the vale of Urr in the neighbourhood of Castle-Douglas, they are to be found as the lowest rocks of the Silurian tableland where denudation has proceeded far enough to expose that horizon.

The succession in the northern area is given in the following table in descending order—

	UPPER,	{ Grey sandy shales (Lowther shales) containing nodules and lenticular bands of limestone (Wrae limestone), representing the barren mudstones of the Moffat region (Upper Hartfell).
CARADOC,	LOWER,	{ Pebbly grits and conglomerates with calcareous nodules, highly fossiliferous (Duntercleugh, Kilbucko, Wallace's Cast), yielding trilobites, brachiopoda, corals, encrinites, etc. Micaceous shales, flags, and greywackes. The shales contain dark seams with graptolites.
LLANDEILO,		{ Prominent band of black shales with graptolites belonging partly to the Lower Hartfell (Caradoc) and partly to the Glenkiln horizons. Grey, green, and red cherts and mudstones with Radiolaria, partly of Arenig age.
ARENIG,		{ Volcanic zone, comprising lavas and tuffs with intrusive igneous rocks.

These representatives of the Arenig, Llandeilo, and Caradoc rocks rise from underneath the great belt of Llandovery strata, along the northern margin of the Silurian tableland from Leadhills to Leadburn, where they are thrown into innumerable folds, frequently inverted. By means of the volcanic zone, the radiolarian cherts, and overlying band of black shales, it is possible to unravel the complicated stratigraphy of the region. It is important to note, however, that even the band of Glenkiln black shales, which is so prominent in that area, gradually disappears in certain sections, and is replaced by green and grey mudstones and shales. It is evident, therefore, that as the observer passes from the central Moffat area to the northern margin of the tableland, there is a gradual change in the character of the strata as indicated by the occurrence of shales, flags, greywackes, and conglomerates in the latter region, and by the disappearance of the black shales.

From the Leadhills north-westwards to the valley of the Stinchar, these Arenig, Llandeilo, and Caradoc rocks are repeated by endless folds. The volcanic zone is admirably seen on various arches in the neighbourhood of the town of Sanquhar, always succeeded by the radiolarian cherts, the black shales with graptolites, and other sediments. This portion of the tableland is flooded chiefly by the coarser sediments of Caradoc age, consisting of shales, greywackes,

grits, and conglomerates which are comparatively unfossiliferous.

In the neighbourhood of Girvan there is an extensive area of Silurian rocks differing in one important particular from those of the Southern Uplands, namely, in the profusion of fossils throughout several zones. Many of the forms are new to science, and when we consider the great variety of organic remains obtained from that area, comprising graptolites, corals, trilobites, brachiopods, and cephalopods, there is little wonder that the strata have received a large amount of attention. Large collections of fossils have been made, which have been described by Salter, McCoy, Davidson, Etheridge sen., Nicolson, Etheridge jun., and other palæontologists; while the relations of the rocks have been studied by Murchison, Sedgwick, Nicol, A. Geikie, Carrick Moore, Lapworth, and others. The rocks have been much folded and dislocated, and they have also undergone local metamorphism by the intrusion of igneous rocks. The area occupied by these strata extends along the coast for several miles south from Girvan, as far as Pinbain Hill, while it runs inland to the valley of the Stinchar. There is likewise an isolated tract on the north side of the valley of the Girvan in the midst of Old Red Sandstone and Carboniferous strata, and extending from Craighead north-east to Newlands, a distance of about 6 miles.

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The following order of succession was established by Professor Lapworth after a detailed examination of

the complicated stratigraphy of the region lying to the north of the valley of the Stinchar.

UPPER SILURIAN.	DAILY SERIES.	3. Straiton Group, including grits and conglomerates, shales with <i>Beyrichia Kladevi</i> , Blair flags and shales with <i>Monograptus vomerinus</i> , Drumyork flagstones.
		2. Bargany Group, comprising flagstones and shales (Blackwood and Glenfoot).
		1. Penkill Group, including <i>Cyrtograptus Grayi</i> mudstone, <i>Protovirgularia</i> grits, Penkill flags, Crossoptodia shales.
	NEWLANDS SERIES.	3. Camregan Group, containing <i>Rastrites maximus</i> shales, Camregan limestone, <i>Rhynchonella</i> grits.
		2. Saugh Hill Group, with <i>Monograptus Sedgwickii</i> beds, Saugh Hill sandstones, Woodland beds, with a zone of boulder conglomerate.
		1. Mulloch Hill Group, including Glenwells shales, Mulloch Hill sandstone, Mulloch Hill conglomerate.
LOWER SILURIAN.	ARDMILLAN SERIES.	4. Drummuck Group, with grey mudstones yielding trilobites in profusion, <i>Trinucleus Bucklandi</i> , etc.
		3. Barren flagstones with <i>Diplograptus truncatus</i> , flagstones and shales with <i>Nematolites</i> .
		2. Whitehouse Group, containing mudstones and shales with cement-stone bands with <i>Ampyx</i> , <i>Asaphus</i> , etc.
	BARR SERIES.	1. Ardwell Group, comprising Cascade grits with <i>Climacograptus caudatus</i> , etc., flags and shales with <i>Dicranograptus ramosus</i> , Knockgerran shales with <i>Climacograptus Scharenbergi</i> .
		4. Balclatchie Beds with grits and highly fossiliferous mudstones.
		3. Benan Conglomerate with pebbles of radiolarian chert and volcanic rocks.
		2. Stinchar Limestone Group, comprising <i>Didymograptus</i> shales, limestones, <i>Maclurea</i> beds, <i>Orthis-confinis</i> beds.
		1. Kirkland conglomerate.

During the recent examination of the volcanic areas near Ballantrae by the Geological Survey, clear evidence was obtained to prove that, on the north side of the Stinchar valley, the great conglomerate of Benan and Kirkland rests unconformably on the volcanic series below, the pebbles being largely composed of volcanic materials and radiolarian cherts. On the south side of the valley there is a perfect passage from the volcanic series into the overlying radiolarian cherts, dark shales, green and grey mudstones, with Llandeilo graptolites. Even to the north of the Stinchar there are fine sections showing the sequence from the interbedded lavas, tuffs, and agglomerates, into the overlying radiolarian cherts and black shales. Here, as elsewhere in the south of Scotland, the volcanic rocks are invariably overlain by radiolarian cherts where the materials have not been removed by denudation. The volcanic rocks of the Ballantrae region present features of special interest. They consist of slaggy diabase and andesite lavas, with tuffs and agglomerates, which are admirably seen on the shore north and south of Ballantrae. They are associated with a great series of intrusive igneous rocks, comprising serpentine, gabbro, dolerite, and granitoid rocks, that have produced contact alteration on the lavas and some of the sedimentary deposits. The volcanic rocks and overlying strata have been thrown into a series of sharp folds, the axes of which run in a north-east and south-west direction. Owing to prolonged denudation, and the consequent removal of the sediments under which the igneous rocks lay buried, there is an extensive development of these volcanic rocks, the record of which forms such an interesting chapter of the Silurian system of the south of Scotland.

Along the southern margin of the Southern Uplands a belt of Wenlock and Ludlow rocks is traceable from the Cheviots to Kirkcudbright and Barrow Head, consisting mainly of grits, brown crusted greywackes, flags, and shales; they contain dark fissile shales yielding graptolites (*Cyrtograptus Murchisoniae*, *Retiolites Geinitzianus*, etc.) Sometimes they occur in thin leaves associated with the grey shales and flags, some-

times in prominent bands 20 to 30 yards broad. Lithologically, there is a clear distinction between them and the well-known black shales of the Moffat series already described. Along with the graptolites fragments of crustaceans and orthoceratites are found in considerable abundance in the dark shales, comprising the following species, *Orthoceras imbricatum*, *Orthoceras tenuicinctum*, *Orthoceras annulatum*. Yet another distinguishing feature is the occurrence of zones of pebbly grit or conglomerate conspicuously developed on the headlands near Balmae, Kirkcudbrightshire, where they are associated with fissile, olive-coloured shales and mudstones, with limestone nodules. Both the grits and limestones are highly fossiliferous, and it is evident from the nature of the organic remains that the strata belong to the horizon of the Wenlock shales; indeed they resemble lithologically the mudstones of this age in Shropshire, while the lower and more sandy portion of the series is not unlike the Coniston flags and grits of Westmorland. On the north side of the Silurian tableland there is a splendid development of the Ludlow rocks passing conformably upwards into the Lower Old Red Sandstone. These representatives of the highest division of the Silurian system in Scotland form isolated patches in the heart of the Old Red Sandstone, and occur at a distance of several miles from the northern margin of the Silurian area in the counties of Edinburgh, Peebles, and Lanark. In the two former counties the Upper Silurian rocks occupy several small tracts confined to the Pentland Hills, where they reach a thickness of 4000 feet, while in Lanarkshire they are brought to the surface by two arches in the Old Red Sandstone. In the latter county the anticlinal folds occupy two parallel strips of ground not far removed from each other, and in each case the strata graduate on the north side into the Lower Old Red Sandstone, while along the southern margin they are abruptly truncated by a reversed fault bringing them in contact with different members of the latter formation (see geological section in articles LANARKSHIRE and PEEBLES SHIRE). Unfortunately, owing to these reversed faults, there is no

evidence bearing on the relations of the Upper Silurian rocks to the lower division of the Silurian system; but from the fact that the members of the upper division are inclined at gentle angles to the north-west, while the older strata of the Silurian tableland not far to the south are much folded, it is highly probable that originally they were separated by an unconformability. The distance between the anticlinal fold of Upper Silurian strata on the Hagshaw Hills in Lanarkshire and the northern border of the Silurian tableland is about 5 miles, but on the south slope of Tinto the upper and lower divisions occur within 2 miles of each other. At the latter locality the lowest beds of the Lower Old Red Sandstone are exposed with a general inclination to the north-west, and were it not for the overlap of certain volcanic rocks the same conformable passage would be found between the Old Red Sandstone and Silurian strata. The total thickness of the Lanarkshire series is about 3500 feet, but it is highly probable that the lowest members, both in Lanarkshire and Midlothian, represent part of the Wenlock in addition to the Ludlow rocks. A large suite of fossils has been obtained from the Lesmahagow area and from the anticlinal fold in the Hagshaw Hills, comprising *Ceraticaris papilio*, *Dictyocaris Slimoni*, *Pterygotus bilobus*, *Lingula minima*, *Strophomena rhomboidalis*, *Modiolopsis complanata*, *Orthonota impressa*, *Platyschisma (Trochus) helveticus*, *Orthoceras gracile*. Among the organic remains from these beds the most remarkable are the large Eurypterids first discovered by the late Dr Slimon of Lesmahagow, which have generally been regarded as crustaceans, but recent research has shown that it would be more correct to refer them to the Arachnida. A true scorpion was also disinterred from these beds in 1883 by Dr Hunter of Carlisle.

The Silurian rocks of the south of Scotland are pierced by several large masses of granite and quartz-felsite, chiefly in Galloway, where they form oval-shaped bosses in the midst of both divisions of the system. In many cases the strike of the sedimentary beds has not been affected by the intrusion of these coarsely crystalline masses, while in others a very marked deflection is observable. They are surrounded by a belt of altered strata, varying in extent in proportion to the size of the granite mass. It is probable that the dykes and veins of quartz-felsite, so abundantly developed in the Southern Uplands, are associated with the granitic intrusions, or at least are mainly of the same age. From the relations which the granite masses bear to the Silurian and Old Red Sandstone strata, it is possible to fix approximately the date of their eruption. On the one hand they must be more recent than the Upper Silurian rocks in the south of Scotland, since they pierce the latter in Galloway; while, on the other hand, they are probably older than the Upper Old Red Sandstone, since granite and felsite pebbles derived from these masses are met with in the conglomerates of the latter formation and in the Cement-stone series. At the same time, it should be remembered that some of the bosses and veins of quartz-felsite undoubtedly belong to the epoch of volcanic activity which followed the deposition of the Upper Old Red Sandstone in the counties of Berwick, Roxburgh, and Dumfries, to be referred to presently.

Having now briefly indicated the general characters of the rocks in the North-west Highlands and the Southern Uplands, we may allude to the remarkable geographical changes that characterised the close of the Silurian period. From the foregoing data it is evident that we have in Scotland a great succession of marine deposits, which accumulated in the Silurian sea, probably of no great depth. At that remote time the land seems to have lain chiefly in the north-west of

the European area, as suggested by Godwin Austen, a fragment of which is still preserved to us in the far north-west of the counties of Sutherland and Ross. Whether there may have been an extensive range of Archaean land in the tract now occupied by the Central Highlands we do not at present presume to say. This at least is certain, that the ancient Atlantis, wherever it lay, must have undergone enormous denudation, judging from the vast thickness of the Silurian sediments. During their accumulation there must have been a gradual subsidence of the oceanic basin, save towards the close of Lower Silurian time. The unconformability between the upper and lower divisions of the system points to the elevation of the sea-floor, and to the consolidation, folding, and denudation of the strata of Lower Silurian age in the south part of the kingdom. After a lapse of time subsidence again ensued, which continued till towards the close of the period when the Silurian sea-floor was elevated, in part, so as to enclose a series of inland basins. In these vast inland lakes an interesting series of deposits, now forming the Old Red Sandstone, were accumulated, which are easily distinguished from the older Silurian strata and from the younger deposits of the Carboniferous formation with their abundant marine fauna. In Scotland they attain an enormous development.

The Old Red Sandstone.—The valuable researches of Sir A. Geikie enable us in some measure to grasp the leading features of the physical geography of the country at the beginning of the Old Red Sandstone period. To the ancient basins, in which the sediments of this formation were laid down, he has assigned specific names, indicating the geographical areas which they occupied—(1) Lake Orcadie, embracing all the Old Red Sandstone to the north of the Grampian range; (2) Lake Caledonia, representing the great midland valley, from the slopes of the Highlands to the Southern Uplands; (3) Lake Cheviot, covering a portion of the south-east of Scotland and the north of England, from St Abbs Head, along the base of the Silurian Hills, to the head of Liddesdale, and including the Cheviots; (4) Lake of Lorne, occupying a district in the north of Argyllshire from the south-east of Mull to Loch Awe. The two great tablelands of the country—the Highlands and the Southern Uplands—at that time formed prominent land barriers separating vast inland sheets of water. From an examination of the relations between the Lower Old Red Sandstone and those ancient tablelands, it is evident that the latter must have undergone considerable erosion before the beginning of the Old Red Sandstone period. On both sides of the Grampians there are numerous examples of ancient hollows now filled with deposits belonging to the lower division of this formation. But notwithstanding these important geographical changes, it ought to be borne in mind that, in certain areas of the midland basin, sedimentation must have advanced continuously from Upper Silurian to Lower Old Red Sandstone time, as is proved by the gradual passage from the one formation to the other.

In Scotland the representatives of this formation may be grouped in two divisions, a lower and an upper, which are separated from each other by a marked unconformability, indicating a vast lapse of time and important physical changes. A prominent feature in both divisions is the occurrence of massive conglomerates, breccias, red sandstone, and shales; the whole series presenting very different lithological characters from the Silurian and Carboniferous rocks. The contrast becomes still more marked when we consider the nature of the organic remains. Instead of a profusion of marine forms we find abundant remains of land plants, ganoid fishes whose living representatives are

now found in rivers and lakes, eurypterids, bivalve crustaceans, and myriapods. Indeed there can be little doubt that the evidence derived from the fossils is decidedly in favour of the view that these deposits accumulated in vast inland lakes. They are regarded as the equivalents of the Devonian rocks, which are also intercalated between the Silurian and Carboniferous formations. The latter, however, are oceanic deposits, charged with undoubted marine organisms, and are typically developed in Devonshire, from which county the formation received its name. The lower division of the Old Red Sandstone is further characterised by an extraordinary development of volcanic rocks, indicating prolonged volcanic activity in several of the great basins. These ancient lavas and ashes were so thickly piled on each other that, notwithstanding the excessive denudation which they have undergone, they still form prominent ranges of hills.

Lower Division.—Beginning with the representatives of the lower division which were laid down in the great midland basin, we find that they form two parallel belts—the one extending from the coast of Kincardineshire and Forfarshire to the mouth of Loch Lomond and the Firth of Clyde, the other from the Pentlands south-west by Tinto to Ayrshire. The centre of this basin is covered with Carboniferous and Permian rocks, and hence the Lower Old Red Sandstone now exposed to view can only be regarded as a portion of a still more extensive series of deposits. Yet the evidence clearly shows that it attains a vast thickness in the Central Lowlands. Disregarding minor differences, these deposits may be arranged in three groups: (1) a lower, consisting of conglomerates, sandstones, and flags, with no volcanic rocks; (2) a middle, composed almost wholly of lavas, tuffs, and agglomerates; (3) an upper, consisting of conglomerates, sandstones, flags, and red clays. In the northern belt these subdivisions reach a maximum thickness of 20,000 feet, while in Lanarkshire and Dumfriesshire the total average thickness is about 15,000 feet. Such a vast accumulation of deposits clearly points to the long-continued subsidence of the midland basin, but there is at the same time sufficient evidence for maintaining that the downward movement was interrupted by local elevations of considerable importance. The members of the upper group are splendidly developed in the centre of a great trough or synclinal fold, extending from Stonehaven by the Braes of Doune to near Drymen—a distance of 100 miles, while the ancient lavas and ashes rise from underneath these and form a prominent arch in the Sidlaws and Ochils. In the latter range the volcanic series is well-nigh 6000 feet thick, which gives one a vivid impression of the activity of these ancient volcanoes, but in Forfarshire and Kincardineshire the lavas and ashes are associated with sandstones and flags in such a way as to prove that the eruptions must have been intermittent. At that far-off time there must have been a long line of subaqueous cones extending from Perthshire into Kincardineshire, nearly parallel with the margin of the inland lake; but it is highly probable that some of them may have ultimately raised their peaks above the surface of the lake, and may have become subaerial. Reference has already been made to the geological horizon of the two famous fish beds in Forfarshire, and a list of the fishes, the eurypterids, and the myriapods has been given (see Geological Section of FORFARSHIRE). We must now proceed to state one or two important points bearing on the subsidence of the tableland of the Highlands. The representatives of the lower group underlying the volcanic series are exposed on the coast at Stonehaven, where they reach a thickness of 5000 feet, and at their northern limit they are abruptly truncated by powerful faults or fractures that bring them into conjunction with the

metamorphic rocks of the Highlands. These great fractures have been traced from the Kincardineshire coastline to the Firth of Clyde, and throughout a considerable part of their course, as first pointed out by Sir Archibald Geikie, they traverse the Old Red Sandstone, thus bringing different members of this formation against each other. On the north side of the fault between Crieff and Cortachy there is a considerable development of coarse trappean conglomerates with thin beds of lava, occupying the horizon of the volcanic series (Group 2), and resting unconformably on the metamorphic rocks, while the underlying beds (Group 1) are absent. It is apparent, therefore, from this overlapping of the strata, that there must have been a gradual depression of the Highland barrier, and that as the waters of the lake crept northwards the metamorphic rocks of the Highlands were buried under the accumulating sediments of the higher groups. This conclusion receives further support from the fact that the Uam Var conglomerates forming the highest member of the Lower Old Red Sandstone in Perthshire contain pebbles of various metamorphic rocks derived from areas lying far to the north of the great line of fracture. It is probable, therefore, that only the loftiest heights of that ancient tableland projected above the water towards the close of the Lower Old Red Sandstone period.

The foregoing subdivisions are no less conspicuously developed in the belt that borders the northern margin of the Southern Uplands. In this case also the Old Red Sandstone is bounded by a great fracture extending from Midlothian to Ayrshire, which allowed this formation to slip downwards on the north side against the Silurian rocks. As already indicated, the flagstones of the lowest division (Group 1) graduate downwards into the Upper Silurian beds in the Pentlands and in Lanarkshire. In the latter area their thickness is quite as great as in Kincardineshire. In this region also certain shales occur containing traces of an Upper Silurian fauna, which have been explained on the supposition that Upper Silurian forms survived in the open sea even in Lower Old Red Sandstone time, and that on the partial removal of the intervening barrier they migrated into the Old Red Lake. It is highly probable, however, that these shales are really of Upper Silurian age, being brought to the surface by an axial fold similar to that in the Hagshaw Hills near Muirkirk. Equally interesting are the proofs of local elevation during this period in the southern portion of the basin. In the Pentlands, the great succession of lavas and tuffs forming Group 2 rests with a violent unconformability on the members of the underlying division (Group 1), and this same discordance has been traced far to the south-west to the slopes of Tinto. But when we advance still farther to the west, to the Kennox and Duneaton Waters, the two lower groups are found to be quite conformable. Here, then, is convincing evidence that in the south-west part of the basin the subsidence was slow and continuous, while in the south-east the downward movement was interrupted by a local elevation during which the members of the lower group were upheaved, folded, and denuded. After a time, they were again submerged and buried underneath volcanic accumulations and the conglomerates, sandstones, and flags of the upper group. Crossing the Silurian tableland to Lake Cheviot, we find, as already described (see Geological Section in article ROXBURGHSHIRE), that the deposits consist almost wholly of a great succession of volcanic rocks resting on the denuded edges of Silurian strata. On the Cheviots they are splendidly developed, but it is observable that the volcanic series rests directly on the old tableland without the intervention of any sedimentary deposits; in short, the representatives of

Group 1 found in the midland basin are absent in the Cheviots. But in the neighbourhood of Eyemouth red sandstones and conglomerates of this age are associated with fine volcanic ash, from which it is evident that the old tableland of the Southern Uplands was gradually submerged during this period, after the manner of the Highlands. Again, when we pass to the north of Argyllshire, there is ample evidence to show that in Lake Lorne volcanoes must have been active for a long course of time, because from Loch Crinan to Loch Melfort, and from the south-east of Mull to Loch Awe, there are thick piles of lava presenting the typical features so well developed in the Ochils.

In the great northern basin, comprising the Lower Old Red Sandstone of the Moray Firth, Caithness, Orkney, and Shetland, there is a considerable divergence in the character of the strata and the fish fauna from that on the south side of the Grampians. Reference has been made in preceding volumes to the geological structure of the Old Red areas round the shores of the Northern Firths, to the famous fish-bed which has yielded so many ichthyolites, and to the meagre relics of volcanic activity. In Caithness, however, this series rivals in importance the Lower Old Red Sandstone of the midland basin. At the base there are conglomerates and sandstones, graduating upwards into a remarkable development of blue and grey bituminous flagstones charged with abundant fish remains, which Sir Roderick Murchison regarded as a middle division of the Old Red formation. It is highly probable that Murchison's view may eventually prove to be correct. Dr Traquair, F.R.S., has called attention to the fact that though the Eurypterid (*Pterygotus*), so typical of the Upper Silurian and Lower Old Red Sandstone rocks, occurs in the Caithness flagstones, yet there are only two genera of fishes (*Cephalaspis* and *Mesacanthus*) common to the Caithness flagstones and the Old Red strata south of the Grampians. The great divergence in the fish fauna seems to be equally apparent in the plant remains. According to Mr Kidston the assemblage of plants in the Caithness flagstones and in the Old Red beds of the Moray Firth basin differs in important particulars from that in the Lower Old Red Sandstone of Forfarshire. In a valuable paper (*Trans. Roy. Phys. Soc., Edinburgh*, 1894), Dr Traquair calls attention to the fishes characteristic of the flagstones in Achanarras quarry, Caithness. He shows that no such assemblage of fossils has been recorded from any other part of Caithness. It contains, among others, *Palaeospondylus Gunnii*, a form new to science, *Pterichthys Milleri*, *P. productus*, *P. oblongus*, *Osteolepis macrolepidotus*, and *Cheirolepis Trailii*, which have not as yet been found anywhere else in Caithness; together with *Diplacanthus striatus* and *Diplopterus Agassizii*. He states that these species are abundant both in Orkney and in the Moray Firth nodules, so that the list from Achanarras reads more like one from either of these regions. The fish fauna from Achanarras differs from the peculiar fish fauna of John o' Groats, where the prevailing forms are *Microbrachius Dicki*, *Dipterus macropterus*, and *Tristichopterus alatus*. It also differs from the assemblage of fishes in the Thurso flagstones.

At the close of the Lower Old Red Sandstone period important geographical changes again ensued. The downward movement gave place to upheaval throughout the various basins, and the vast series of deposits which had been slowly accumulating for ages were elevated so as to form a land surface and subjected to prolonged denudation. That this interval must have been of long duration is clearly proved by the marked

unconformability between the upper and lower divisions of the system. We cannot tell to what extent the Old Silurian tableland of the Southern Uplands may have been covered by the deposits of the lower division, but this much we do know, that they must have been removed for the most part by subaerial agencies during the interval referred to, and the tableland must have been trenched by narrow valleys ere the Upper Old Red Sandstone was laid down. Even now we can faintly trace the outlines of these old valleys in the Lammernmuirs, where they are being excavated anew by the removal of the breccias of the upper division. In like manner, the Highland tableland must have been stripped to a considerable extent of the deposits of Lower Old Red age, as is proved by the fact that the red sandstones of the upper division rest directly on the metamorphic rocks in the basin of the Findhorn. Finally, we may adduce a striking example to show how the deposits of the lower division in the midland basin (Lake Caledonia) were subjected to a vast amount of erosion. Between the Ochils and the flanks of the Grampians, as already indicated, there is a great succession of sedimentary deposits nearly 10,000 feet thick, overlying the lavas and tuffs of the Ochils. Originally, the latter must have been buried by these overlying sediments. During the interval referred to, the volcanic series and the sandstones, flags, and conglomerates resting on them, were thrown into a great anticlinal arch, the vast thickness of sedimentary deposits forming the crest of the arch were removed, and the old lavas and tuffs were laid bare. Further, the volcanic plateau must have been carved into a series of hills and valleys ere the land was again submerged to receive the deposits of the ensuing period.

Upper Division.—The Upper Old Red Sandstone, as already stated, rests everywhere unconformably on older rocks, but graduates upwards into the Carboniferous formation. For this reason the strata of this formation have sometimes been regarded as merely a lower division of the Calciferous Sandstone. Their lithological characters link them, however, with the Old Red Sandstone, a correlation which receives support from the continued presence of land plants and ganoid fishes. During this period lacustrine conditions prevailed similar to those already described. The Highland tableland formed a barrier between the northern and midland basins, and the Silurian tableland of the Southern Uplands, in part at least, separated the latter from the basin along the southern border of the country. As yet the true marine fauna of the Carboniferous period was excluded from the various basins. There is little variety in the nature of the deposits of the upper division. In the northern basin they occur in the counties of Elgin, Nairn, Caithness, and Orkney. Perhaps the grandest development of these rocks in the country occurs in the island of Hoy, where the unconformability is admirably seen at the base of The Old Man, and where the basement platform consists of sheets of basic lava and tuffs, overlain by a great succession of red and yellow sandstones. The fossils obtained from these beds in the Moray Firth basin present certain interesting features. Dr Traquair (*Trans. Roy. Phys. Soc., Edin.*, 1895) calls attention to the peculiar distribution of the fish fauna in the Upper Old Red beds of Nairn and Elgin. He shows that *Asterolepis maximus*, formerly known as *Pterichthys major*, is confined to the Nairn sandstones, while the assemblage found in the Upper Old Red beds of Elgin, viz., *Holoptychius giganteus*, *Bothriolepis major*, *Psammosteus*, etc., are not found in the Nairn sandstones. The stratigraphical evidence seems to prove that the Elgin sandstones are on a higher horizon than the Nairn beds. In the midland basin there is a considerable development

of rocks of this age consisting of red sandstones, marls, conistones, and breccias, which, as a rule, are unfossiliferous, save at a few well-known localities. Of these, Dura Den is the most celebrated, the fish remains occurring there in shoals (see Geological Section of FIFESHIRE). In the Lammermuir and in Lauderdale the remarkable breccias of this age have been compared to boulder clays of glacial origin, to which, indeed, they bear a marked resemblance, but these are overlapped by a group of red sandstones and marls covering extensive areas in Berwickshire and Roxburghshire. Indeed, the representatives of this series can be traced continuously from the valley of the Teviot across the watershed to Langholm and Annandale. When we consider the remarkable uniformity in the characters of the Upper Old Red strata, the presence of brecciated sandstones and ripple marks, it is evident that the deposits must have been laid down in shallow water, and it is equally apparent that the occurrence of *Holoptychius nobilissimus* in the northern, midland, and southern basins seems to indicate that the strata may be justly grouped with the Old Red Sandstones.

Carboniferous System.—The records of this formation are of great interest and importance. The succession of sandstones, shales, limestones, coals, and ironstones composing this system have long received a vast amount of attention, partly on account of their great economic value and partly owing to the abundant flora and fauna embedded in the rocks. Scotland is singularly fortunate in possessing a rich development of the members of this formation, though owing to subsequent folding and denudation they have been confined mainly to the Central Lowlands and the Border territory. There is the clearest evidence for maintaining that originally they must have covered a much wider extent of country; indeed, from the relics now found in the Southern Uplands there can be no doubt that as the period advanced the old Silurian tableland was gradually submerged and buried underneath these deposits. In this instance we have only another striking example of the story which has been so often repeated in the geological history of the country, namely, of the accumulation of thick deposits on these ancient tablelands and their removal by denudation.

Before describing the various subdivisions of the system as they are represented in Scotland, brief reference may be made to the nature of the flora and fauna which characterised the period. The origin of the various coal-seams is now well understood. Coal is simply mineralised vegetable matter which was not drifted seawards as formerly supposed, but which accumulated on an old land surface. The presence of beds of fire-clay underneath most of the seams of coal, in which occur numerous roots (*Stigmariæ*) of large trees, suggested to Sir William Logan the explanation that the fire-clay represents the soil in which the Carboniferous vegetation grew. This discovery was further confirmed by the occurrence of huge trees known as *Sigillaria*, the stems of which were about 12 feet in circumference, standing vertically on a bed of coal, while the roots penetrated the fire-clay underlying it. Further, a careful examination of the seams of coal plainly shows that they consist of leaves, branches, stems, and roots of this ancient vegetation, and, in particular, of the spores which were shed in myriads from the trees. Again the 'roof' of the coal-seams is composed either of sandstone or limestone, indicating in the former case a gradual submergence of the old land surface and the deposition of sediment over the decaying vegetable matter, and in the latter a sudden submergence so as to allow marine organisms to invade the area. The plants of the Carboniferous period belong mainly to the flowerless division of the vegetable kingdom, the conspicuous groups

being Ferns, Calamites, and the Lepidodendroids. Amongst the genera of ferns the following may be mentioned: *Neuropteris*, *Sphenopteris*, *Pecopteris*, *Odonopteris*, *Cyclopteris*, *Alethopteris*, *Adiantites*. No less abundant are those peculiar striated fossils named Calamites, which grew on the sandy and muddy flats, often reaching a height of 20 feet or more. The Lepidodendroids, which attained their greatest development in the Carboniferous period, are mainly represented by the genus *Lepidodendron*. They formed huge trees upwards of 50 feet high, and were indeed the giants of the Carboniferous forests. The bark covering the long slender stems was marked with diamond-shaped scars, and from the ends of the branches hung innumerable cones, termed *Lepidostrophi*. Next in importance are the Sigillarioids, so named from the seal-like impressions on the bark. The stem is traversed by vertical ridges and furrows, which serve to distinguish it readily from that of the Lepidodendroids, and the roots, forming long compressed masses, with branching rootlets, are known as *Stigmariæ*. The Conifers were probably represented by the genera *Araucarioxylon* and *Dadoxylon*, while the fruit of the latter is supposed to be indicated by the fossil *Trigonocarpon*.

In an admirable address (*Proc. Roy. Phys. Soc.*, Edinburgh, 1894) Mr Kidston has advanced a classification of the Carboniferous strata based on the distribution of the fossil flora. In his opinion the fossil plants of the Carboniferous formation clearly indicate a great twofold division of these rocks, viz. (1) Upper Carboniferous, comprising (a) the true Coal Measures, (b) Millstone grit; (2) Lower Carboniferous, including the Carboniferous Limestone series of Scotland and the Calciferous Sandstone series. He states that the flora of the Lower Carboniferous is much more scanty than that of the Upper Carboniferous rocks. The prevailing species is *Lepidodendron Veltheimianum*, Sternb. The genus *Sigillaria* is much less frequent. *Lepidophlois* also is present. *Asterocalamites* is distributed throughout the whole of the Lower Carboniferous beds, but *Calamites* is extremely rare. The ferns are generally characterised by bearing more or less distinct cuneate or very narrow linear pinnules, while the majority of Upper Carboniferous ferns possess round-lappeted pinnules. On the other hand the plants of the Upper Carboniferous strata are all specifically distinct from those which preceded them. The true Coal Measures are characterised by a great development of Ferns, Calamites, *Lepidodendra*, *Sigillaria*, and *Cordaiteæ*. Mr Kidston is inclined to doubt that the club mosses, which now grow on our hills and moors, and the horsetails (*Equisetum*) are the descendants of the *Lepidodendra* and *Calamites* respectively. He further suggests that the genera *Araucarioxylon* and *Dadoxylon* should be classed with the *Cordaiteæ* and not with the *Conifera*.

The fauna of the Carboniferous period is no less interesting and abundant. From the marine limestones a rich variety of marine organisms has been obtained, though it must be admitted that in Scotland the mollusca are dwarfed in size compared with those from the Carboniferous Limestone of England—a difference which will be satisfactorily accounted for when we come to consider the physical conditions which prevailed in the two areas. Further, the strata associated with the coal-seams yield organisms implying terrestrial, fresh or brackish water conditions. Among the Protozoa both sponges and *Foraminifera* are represented; sponge spicules occasionally occur, as in the limestones at Dalry, Ayrshire; while the latter group are particularly abundant, and comprise the following genera: *Archæodiscus*, *Saccamina*, *Textularia*, *Trochammina*, *Valvulina*. Of these *Saccamina Carteri* is perhaps best developed, as several beds of limestone and limestone shales are almost

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wholly made up of this organism. A large number of *Corals* has been obtained, including the following genera: *Alveolites*, *Aulophyllum*, *Clisiophyllum*, *Cyathophyllum*, *Favosites*, *Lithostrotion*, *Lonsdalea*, *Syringopora*, *Zaphrentis*. Of the *Echinodermata* the sea-lilies or crinoids are the most abundant; indeed several of the limestones might fitly be designated Crinoidal from the fact that they consist mainly of the broken columns and plates of these forms. There are also several species of the sea-urchin *Archæocidaris*. Amongst the Annelids *Spirorbis carbonarius* occurs in the limestones, *Serpulites* in the shales, and *Arenicolites* in the sandstones. The crustaceans are numerous represented, particularly the Ostracods, which include the following genera: *Bairdia*, *Beyrichia*, *Cypridina*, *Cythere*, *Kirkbya*, *Leperditia*. During this period Trilobites seem to have become extinct, though they occur in the lower divisions of the system. Phyllopo-
 ds are represented by the genera *Dithyrocaris*, *Estheria*, etc.; the Merostomata by *Belinurus*, *Prestwichia*, and *Eurypterus*, now generally regarded as arachnids. The air-breathing arthropods are represented by Arachnids, Myriapods, and Insects. Quite a valuable addition has recently been made to our knowledge of these Arachnids by the discovery of several species of scorpions in the Lower Carboniferous rock in Dumfriesshire (see Geological Section of DUMFRIESSHIRE). The Myriapods include the genera *Euphoberia* and *Xylobius*, while insects are represented by a cockroach and the larva of a dragon-fly recently found in the prolific zones of the Calciferous Sandstone near Langholm. The shales associated with the limestones are frequently crowded with Polyzoa, comprising the genera *Archæopora*, *Ceripora*, *Fenestella*, *Glaucanome*, *Polypora*. The Brachiopods are represented by the genera *Lingula*, *Orthis*, *Productus*, *Rhynchonella*, *Spirifera*, *Strophomena*, and *Terebratula*; the Lamellibranchs by *Avicula*, *Aviculopecten*, *Posidonomya*, *Anthracosia*, *Modiola*, *Nucula*, *Sanguinolites*; the Gasteropods by *Dentalium*, *Euomphalus*, *Murchisonia*, *Pleurotomaria*; the Cephalopods by *Goniatites*, *Nautilus*, and

Orthoceras. The remains of fishes are comparatively numerous in the Scottish Carboniferous rocks, representing the three Orders, the Placoids, the Ganoids, and the Dipnoi; the first occurring in limestone and limestone shales indicate salt-water conditions, and the two last estuarine or fresh-water conditions. The following genera may be instanced: *Cochliodus*, *Otenacanthus*, *Petalodus*, *Pæcilodus*, *Acanthodes*, *Otenodus*, *Megalichthys*, *Palæoniscus*. Finally we have to chronicle the occurrence of several genera of amphibians, whose remains are found in the fresh or brackish-water strata, belonging to an extinct order, namely, the Labyrinthodonts. These remains are usually met with in a fragmentary condition, but in the western portion of the midland basin good specimens of the skull and lower jaws have been dug out of the Carboniferous rocks, from which it would appear that even the larger forms were of no great size. The following genera are represented in Scotland: *Megaleterpeton*, *Pholaderpeton*, *Anthracosaurus*, *Pteroplas*.

The detailed examination of the Carboniferous areas by the members of the Geological Survey clearly shows that the strata occur in a series of basins mutually intersected by faults; the crests of the anticlinal folds being occupied by the lower subdivisions of the formation, or by strata even of older date. Perhaps the best example of this disposition of the Carboniferous strata is the great Lanarkshire basin, bounded on the north by the Campsie Fells, on the west by the Renfrewshire and Eaglesham Hills, on the south by the Old Red Sandstone of Lesmahagow and Lanark, and on the east by the Lower Carboniferous rocks of Linlithgowshire. The highest subdivisions of the system occupy the centre of the basin, while the lower members crop out round the margin in normal order, save where the regular succession has been disturbed by faults. The Midlothian and Ayrshire basins are also excellent cases in point. The following generalised section, taken from the official publications of the Geological Survey, will show in descending order the successions throughout the various basins:

CARBONIFEROUS FORMATION,	COAL MEASURES, 1500 to 2000 feet, . . .	2. Red sandstones with shales, fire-clays, marls, and <i>Spirorbis</i> limestone. There are no workable coals in this subdivision; but in the Sanquhar basin there are two very thin seams of coal and a band of ironstone. The strata rest unconformably on Group 1.
	MILLSTONE GRIT, about 600 feet,	1. White and grey sandstones, oil shales, dark shales, fire-clays, numerous valuable coal-seams, and ironstones. Massive sandstones and coarse grits, with thick beds of fire-clay, occasional thin coals, ironstones, and thin limestones.
	CARBONIFEROUS LIME- STONE SERIES, 1000 to 2000 feet,	3. Upper group of three or more limestones, with thick beds of sandstone and coals, etc. 2. Middle group, containing several workable seams of coal, with clay-band and black-band ironstones, associated with sandstones and shales, but not with limestones.
	CALCIFEROUS SAND- STONE SERIES, 2000 to 3000 feet,	1. Lower Group, comprising several beds of limestone with sandstones, shales, some coals, and ironstones. An extremely variable group of strata, consisting of sandstones, dark shales, oil shales, cement-stones, thin coals, and ironstones, which in certain areas are entirely wanting, being represented by a great development of contemporaneous volcanic rocks. These strata form the Cement-stone Group, and graduate downwards into the Upper Old Red Sandstone. When the latter is absent there is a local base, consisting of red sandstones, grits, and breccias.

The close of the Upper Old Red Sandstone period was characterised by a remarkable outburst of volcanic activity, rivalling in importance the volcanic phase of the lower division of that formation. Indeed, when we consider the extensive areas over which the lavas and tuffs can be now traced, and the prominent hill ranges which they constitute, there can be little doubt that

they form by far the most important development of volcanic rocks in the Carboniferous formation. In Haddingtonshire they form the Garleton Hills; in Midlothian they are to be found in the lower part of Arthur's Seat, Calton Hill, and at Craiglockhart; in Fife they are splendidly developed near Burntisland, where they extend from the horizon of the Grange Limestone to the

base of the Carboniferous Limestone series. They sweep in a great semicircle from Stirling along the Campsie and Kilpatrick Hills to the Clyde at Bowling, thence by the Renfrewshire Hills and Gleniffer Braes to the high grounds near Strathaven—a distance of about 70 miles. Still farther to the west they form prominent features in Bute, the Cumbræ, Arran, and even in Cantyre. Crossing the Silurian tableland we find them again constituting a belt of ground curving round the west side of the basin of Lower Carboniferous rocks in Berwickshire and Roxburghshire; and as we approach the Border territory they reappear at the headwaters of the Slitrig, and can be followed continuously by Langholm and Birrenswark to the vale of Annan. The last indication of them in that direction is to be seen at the base of Criffel on the right bank of the Nith, where they are exposed in a picturesque ravine near the village of Kirkbean. In general, this important volcanic zone occurs at or near the base of the Cement-stone Group. At the western limit of the Campsie Fells the ancient lavas rest on sandstones, impure limestones, and marls, yielding plant remains and fish scales, which are admirably seen in the Ballagan Glen near Strathblane. They are grouped with the Cement-stones, and, indeed, form the lowest members of the series, so that there can be no doubt that the volcanic rocks here belong to the Lower Carboniferous period. This conclusion receives further support from the fact that where the volcanoes remained active for a long course of time the Cement-stone Group is either entirely absent or sparingly developed. Perhaps the most remarkable instance of this phenomenon is to be found in Renfrewshire, where the great volcanic bank already referred to, separating the Lanarkshire and Ayrshire coalfields, is composed throughout of lavas and ashes, with hardly any intercalations of sedimentary deposits. Occasionally among the beds of tuff there are calcareous bands charged with *Productus giganteus*, clearly indicating that when the volcanoes became quiescent marine organisms invaded the area. These intercalations are, however, quite exceptional. The base of the volcanic series is not far above the position of the red sandstone group; while at the top the lavas and tuffs graduate upwards through ashy strata into the Carboniferous Limestone series. It is evident, therefore, that the ancient volcanoes in that region must have poured forth sheets of lava and showers of ashes with little cessation while the members of the Cement-stone Group were being laid down in other parts of the midland valley. An interesting feature connected with this important development of volcanic rocks is the number of orifices still to be found, representing the sites from which the materials were discharged. A glance at the published maps of the Geological Survey will show the disposition of these volcanic cones and their relations to the erupted materials. They are usually arranged in a linear manner, and are now filled with various crystalline rocks, such as basalt, porphyrite, feldstone, or with volcanic agglomerates.

There is perhaps no more variable group of strata in the Carboniferous formation of Scotland than the Cement-stone series. Not only does the character of the strata change in different areas, but there is also a great difference in the relative thickness of the beds. But from the researches of the Geological Survey it would appear that, if we exclude minor changes, there are two well-marked types: the one specially developed in the basin of the Clyde and in Ayrshire; the other in the Forth basin. The strata of the former series are singularly unfossiliferous, and consist of grey, blue, and red shales and clays, white or yellow sandstones with cement-stones. Fragments of plants and fish-scales are occasionally met with in the flaggy sandstones, but from the absence of the Carboniferous Limestone fauna

it is evident that the conditions were not favourable for the existence of marine organisms. Quite a different facies is presented by this group in the basin of the Forth, where it ranges from the middle of Linlithgowshire on the west, through Mid and East Lothian to the north of Berwickshire, and it also prevails throughout Fife. The prominent members in these areas are massive, white and yellow sandstones, dark blue and black shales, oil shales, thin bands and nodules of clay ironstone, limestones, and occasionally an important seam of coal. Fossils occur plentifully throughout the series, and throw considerable light on the physical conditions which prevailed during the deposition of the strata. Land plants, comprising Ferns, Calamites, and Lepidodendroids, are extremely abundant in some of the beds, and there is also a profusion of Ostracod crustaceans together with the scales and teeth of various ganoid fishes. Such an assemblage of forms evidently points to the prevalence of estuarine or freshwater conditions, but, on the other hand, there is ample evidence to show that these must have alternated with marine conditions both in Fife and the Lothians. In the neighbourhood of Edinburgh upwards of 17 well-defined species of marine forms have been obtained from the Woodhall shales, and in Fife their occurrence is still more marked. In the latter area the marine bands are characterised chiefly by the presence of *Myalina modioliformis* and *Schizodus Salteri*, but though this is the case, it is important to note that nearly all the fossils in the marine bands are also found in the Carboniferous Limestone series. The order of succession of the strata with the characteristic fossils has already been given in the articles descriptive of the Geology of Fife and the Lothians, and there is therefore no necessity to recapitulate these descriptions here. But there is one point of special interest relating to the presence of small barriers in the midland basin giving rise to a difference in the nature of the deposits. On the north side of the Ochils, close to the Bridge of Earn, there is a small outlier of the Cement-stone series, consisting of blue clays, sandstones, and cement-stones, yielding plant remains and *Estheria*, which belong to the type occurring in the west of Scotland. Both on lithological and palaeontological grounds there is an essential difference between them and the Cement-stone series in the East of Fife. It is evident, therefore, that during the early part of the Carboniferous period the Ochils must have formed a barrier between the Tay and the Howe of Fife, which, however, was submerged during the deposition of the higher divisions of the system.

From the curious alternation of strata in the Cement-stone series of the Forth basin it is clear that there must have been a considerable variation in the physical conditions of the period. The marine limestones indicate the presence of the sea and the incursion of marine forms; the shales and the sandstones point to the silting up of the sea-floor, and the deposition of fresh or brackish water limestones in shallow lagoons; while the coal-seams show that there must have been thick growths of vegetation on the swampy grounds. The accumulation of these deposits was marked by a slow and gradual subsidence which carried downwards several long promontories of land that projected from the tableland to the south. The Pentland Hills, composed of Lower Old Red Sandstone and Silurian rocks, protruded far to the north-east, and another irregular tongue of land extended from the Silurian Uplands in the direction of the sources of the river Irvine. The submergence of these promontories is amply proved by the gradual overlapping of the strata as they are traced towards the south-west. For example, the red sandstone group (Upper Old Red Sandstone), which reaches

a thickness of about 1000 feet at the south end of the Pentlands, gradually disappears about 3 miles to the south, and the Carboniferous Limestone rests directly on the Lower Old Red Sandstone. This slow subsidence was further characterised by sporadic outbursts of volcanic activity when lavas and tuffs were ejected from isolated cones and buried underneath the sediments.

When we pass to the Border territory, we find a splendid development of the Cement-stone group extending from the Cheviots, down Liddesdale, to the vale of the Nith, and along the shores of the Solway to near the mouth of the Dee. In that region the strata resemble those of the basin of the Forth in the presence of marine bands, indicating the same striking alternation of physical conditions. But, notwithstanding this general resemblance, we find a remarkable difference in the fish fauna and even in the plants on opposite sides of the Silurian tableland. The extraordinary number of organisms new to science obtained from the beds in Eskdale in the course of the Geological Survey (See *Geology of DUMFRIESHIRE*), and the fact that few of the species of ganoid fishes are common to the Carboniferous rocks of the Lothians, plainly show that the Silurian tableland must have formed a prominent barrier between the two areas. From the recent researches of the Geological Survey, it appears that the Calcareous Sandstones of Scotland are the equivalents of the greater part, if not the whole, of the Carboniferous Limestone of England, while the Scottish Carboniferous Limestone represents the Yoredale series of the north of England. Now, in the centre of England, where the Carboniferous Limestone is typically developed, there is nearly 4000 feet of limestone charged with corals, foraminifers, and molluscs, thus plainly showing that the calcareous deposits must have accumulated in the open sea at some distance from the land. Indeed, such a vast thickness of solid limestone without any intercalation of sandstones or coals indicates a wonderful uniformity in physical conditions. The sea-floor must have gradually subsided, and as the subsidence advanced, the marine organisms continued to build up the calcareous deposits without being disturbed by the deposition of sediment derived from the land. On the other hand, in the north of England and in Scotland, we find that this unbroken succession of limestone disappears, and is represented by sandstones, shales, limestones, and coals. In short, it is evident that a large extent of land lay to the north, and that the sea became shallower in that direction. The presence of thick sandstones, with abundant land plants and trunks of trees derived from the ancient forests, as well as the cement-stones, points to estuarine conditions; while the limestones show that the shelving shores must have been submerged at repeated intervals so as to permit of the migration of organisms from deeper water.

There are several interesting facts tending to the conclusion that the Calcareous Sandstone series must have extended far beyond their present limits in the south of Scotland. In the belt of Upper Silurian rocks bordering the Upper Old Red Sandstone and Carboniferous formations in Dumfriesshire there are several volcanic cones from which the Lower Carboniferous lavas and tuffs were ejected. These are now filled with coarse agglomerate, in which blocks of Upper Old Red Sandstone and fragments of clays and cement-stones frequently occur. This fact may appear strange at first, when we consider that these formations are now situated to the south of these old vents; but when we reflect that during the discharge of the volcanic materials the Silurian rocks were covered by the red sandstones and cement-stones, the difficulty at once disappears. The blocks torn from the sides of the

vents fell back into the orifices, and though the overlying formations have been removed by denudation, we are now able to tell, from the materials found in the agglomerate, the nature of the strata pierced by the volcanoes. Equally interesting and suggestive is the occurrence of blocks of cement-stone with characteristic Lower Carboniferous fossils in the breccias of Permian age near Moffat. We shall presently call attention to the characters and probable origin of these deposits, that are found along the bottoms of the Annandale valleys. It is enough for our present purpose to state that there are no Lower Carboniferous rocks *in situ* anywhere in that region at the present day. But it is manifest that these old valleys must have been filled with deposits of that age, which were removed by denudation, save a few isolated blocks, before Permian times. Insignificant as these facts may appear, they are of great importance, as indicating the previous extension of the Carboniferous formation and the enormous denudation which it has undergone.

In the succeeding Carboniferous Limestone Group, there is not the same marked variation in the character of the strata as that just described. Throughout the various basins from Ayrshire to Fife and Midlothian, there is a wonderful uniformity in the order of succession as given in the foregoing table. The triple classification can be easily established, and even some of the particular zones of limestone can be traced over extensive areas. In the south of Ayrshire, though this series is poorly developed, the three subdivisions can be identified, and when traced towards the north the limestones gradually swell out till in some instances they attain a greater thickness than in any other part of Scotland. In particular, the lowest limestone, exposed in numerous quarries near Beith, and divided in places in two massive beds with intercalated shales, reaches a thickness of 100 feet, and yields the following characteristic fossils: *Lithostroton irregulare*, *Clisiophyllum turbinatum*, *Poteriocrinus crassus*, *Athyris ambigua*, *Lingula squamiformis*, *Orthis resupinata*, *Productus giganteus*, *P. longispinus*, *P. semireticulatus*, *Spirifera bisulcata*, *Aviculopecten Sowerbii*, *Myalina crassa*, *Bellerophon apertus*, *Orthoceras giganteum*, *Rhisodus Hibberti*, etc. Above this massive limestone there are two important seams of Clayband and Blackband ironstone, the latter being sometimes interstratified with and replaced by volcanic ash. It would appear that, during the deposition of the ironstone, volcanic cones must have been discharging showers of tuff in that region, which were eventually entombed by the later deposits of the Carboniferous Limestone. There are three workable coal-seams in the middle group, overlain by the upper limestones, some of which are of considerable thickness. In Ayrshire the upper group of limestones is followed by beds of basaltic lavas and tuffs—the last indications of volcanic activity in the Carboniferous formation in that county. Again in the great central basin stretching from the Kilpatrick Hills to Linlithgowshire, these groups are equally persistent, and are typically developed. The prominent limestones and coal-seams have already been indicated in the articles descriptive of the geology of the midland counties, to which the reader is referred for details. It will be sufficient to refer to some of the special horizons which are well-known throughout that region. The lowest limestone is represented by the Hurelet or Main Seam, underlain by a bed of coal; the two forming capital horizons for determining the geological structure of the tract. With these are associated smaller and less important beds of limestone, with occasional coals and clayband ironstones. The middle group comprises a number of valuable seams of coal, including the well-known Lesmahagow gas coal,

chiefly in the upper part of the section, alternating with sandstones and shales, while in the lower portion there are valuable seams of clayband and blackband ironstone. The base of the upper limestone group is marked by the Index Limestone—so named because it overlies the valuable minerals of the coal-bearing group, while the highest limestone is represented by the Castlegary and Levenseat seams. No contemporaneous volcanic rocks are associated with the Carboniferous Limestone series in the western part of the midland basin, but in Linlithgowshire they are prominently developed. Beginning towards the close of the deposition of the Cementstones, the volcanic eruptions must have continued till towards the close of the Carboniferous Limestone period, but occasionally there were quiescent intervals, when the corals, crinoids, and molluscs migrated to those volcanic banks, and built up thick seams of limestone and calcareous shales. Reference ought to be made also to the great intrusive sheets occurring so abundantly in the Carboniferous Limestone series in Fife and Stirlingshire, and occupying a tolerably constant horizon, namely, about the position of the lowest limestone zones. These great wedges of igneous material frequently give rise to prominent physical features; they form a well-marked escarpment on the crest of Benarty and the Lomonds, and the same feature is observable at Abbey Craig and Stirling Castle (see *Geology of FIFESHIRE*, also that of *STIRLINGSHIRE*).

From the foregoing description, it is apparent that there must have been a remarkable uniformity in the physical conditions of the period. Where the series is typically developed, the following is the arrangement of the strata in descending order: (a) coal, (b) sandy fire-clay, (c) sandstone, (d) shale, (e) limestone—the latter forming the 'roof' of another bed of coal underlain by the same succession of strata. The limestones indicate a prevalence of marine conditions when the sea-floor was tenanted by corals, crinoids, and other organisms; the shales and sandstones point to the accumulation of sediment and the silting up of the sea bottom. By degrees shallow lagoons and mud flats were formed, which were overspread with that peculiar grey mud suitable for the growth of luxuriant vegetation now stored up in the valuable seams of coal. The fact that a coal-seam is usually overlain by a bed of limestone, shows that a sudden submergence must have ensued, which carried the old land surface down to such a depth as to allow the marine organisms to overspread the decaying vegetation. Of course, it is obvious that during the deposition of the middle coal-bearing group, in which no limestones occur, the land could only have been depressed to a limited extent after the accumulation of the vegetable matter; in fact, the submergence was never great enough to permit the incursion of marine organisms. In the latter case, the roof of the coal is formed of sandstone or shale. Finally, it may be observed that, as the deposition of the ironstones was associated with decaying animal and vegetable matter, which precipitated the salts of iron present in the sea-water, we may justly infer that they accumulated in pools or lagoons. It is evident, therefore, that during the Carboniferous Limestone period the land was steadily subsiding, with long intervals of repose. There are certain facts which may now be adduced tending to show that this irregular subsidence of the land produced violent overlaps of the strata. In the basin of the Clyde, as we advance westwards, the Calcareous Sandstones are overlapped by the Carboniferous Limestone, till the latter rests directly on the Lower Old Red Sandstone to the south of Lesmahagow. Still more remarkable is the occurrence of representatives of the Carboniferous Limestone on the crest of the Old Red Sandstone ridge to the south of Tinto, and still

farther to the south-west, on the Silurian tableland in the Duneaton Water. In the former case they rest unconformably on the Old Red Sandstone, and in the latter they have been preserved by powerful faults, which have brought them into conjunction with the Lower Silurian strata. The significance of these facts, as bearing on the previous extension of the Carboniferous formation over the Southern Uplands, needs no demonstration.

Overlying the preceding group, we find a succession of white, yellow, or red sandstones, which attain a very limited development in Scotland. Where no faults intervene, this formation can be traced as a belt of variable width round the margin of the true Coal-measures, a feature which is conspicuously developed on the eastern border of the great Lanarkshire Coal-field. Sometimes the sandstones merge into grits, and even into fine conglomerates, indicating that land must have been not far distant during their accumulation; sometimes they are associated with fire-clays of considerable economic value, thin limestones, bands of ironstone, and even a few thin coal-seams. These are, however, of exceptional occurrence, the dominant member being coarse sandstone, and hence the term Millstone Grit has been applied to this division of the Carboniferous system. According to the researches of the Geological Survey it would appear to be absent in some parts of the Ayrshire basin, as the Coal-measures rest directly on the Carboniferous Limestone, even where the interbedded volcanic rocks at the top of the latter series are not present. Fossils are by no means plentiful, but the following forms have been obtained from the shales and impure limestones: *Serpulites carbonarius*, *Discina nitida*, *Orthis*, *Lingula mytiloides*, *Bellerophon decussatus*, etc. From the lithological characters of the formation it is apparent that the land must have been subsiding at intervals, and that the depth of the sea never could have been sufficient to allow many true marine organisms to enter the area. The intercalation of some thin coal-seams with the fire-clays points to the recurrence of old land surfaces during the period.

Finally, we have at the top of the Carboniferous system what is unquestionably the most valuable of all the great divisions, namely, the true Coal-measures. It is divisible into two members: the upper, consisting of red sandstones resting unconformably on the lower, composed of numerous valuable coal-seams, clayband and black-band ironstones, bituminous shales, sandy shales, fire-clays, and sandstones. If we take the Clyde coal-field as a typical example, there are no fewer than eleven beds of coal and seven seams of ironstone of more or less value in the central portion of the basin. Though it is true that the coal-seams generally rest on a bed of fire-clay, representing the old land surface on which the vegetation grew, it is observable that some of the seams have no underclay at all. In this case the coal varies in quality, and is frequently intercalated with sandy shales or sandstones. It is probable that in such instances the coal-seams may be due to the drifting of vegetable matter, and their formation may be an exception to that already described. From an examination of the fossils it is evident that during the deposition of the true Coal-measures, fresh or brackish water conditions must have prevailed throughout the Scottish basins. Indeed, the occurrence of Carboniferous Limestone forms is extremely rare, so rare in fact as to show that they were almost wholly excluded from the basins of deposit. The constant repetition of coal-seams with sandstones, shales, and ironstones, shows that land conditions must have been in the ascendant, followed at intervals by slight submergence. It is not necessary to invoke movements of

elevation to enable the vegetation to overspread the sandy sediment. This result might have been successfully accomplished by the gradual silting up of the old sea-bottoms or estuaries, which would convert the shallow seas into muddy flats and swamps. It will be readily perceived that the coal-seams represent an enormous amount of compressed vegetation, and when we reflect that many of the coals are composed, to a large extent, of spores shed from the lycopodiaceous trees, we may form a vivid impression of the long lapse of time represented by each coal-growth. The characteristic fossils of the Coal-measures consist of plants, crustaceans, molluscs, fishes, and labyrinthodonts. The following fossils have been obtained from different horizons in this series: *Sphenopteris*, *Neuropteris*, *Alethopteris lonchitica*, *Calamites*, *Lepidodendron*, *Lepidostrobus*, *Leperditia Scotoburdigalensis*, *Beyrichia arcuata*, *Lingula mytiloides*, *Anthracomya*, *Anthracosia acuta*, *Acanthodes Wardi*, *Coelacanthus lepturus*, *Olenodus*, *Megalichthys Hibberti*, *Pleuracanthus gibbosus*, *Platysomus*, etc.

The marked unconformability at the base of the red sandstones, forming the upper subdivision of the Coal-measures, shows that the prolonged subsidence which had prevailed throughout the Carboniferous period at length gave place to a movement of elevation. The coal-bearing strata were elevated so as to form a land surface, and considerably denuded before the red sandstones were laid down above them. During this interval the Coal-measures must have undergone no small amount of erosion in several of the basins, and we have, therefore, no continuous sequence of deposits at the close of the Carboniferous period. Further, there is evidence to show that during this interval the coal-bearing strata were faulted to some extent before they were covered by the red sandstones. In the course of the Geological Survey of the Sanguhar Coalfield it was observed that the red sandstones actually overspread a fault in the Coal-measures with a downthrow of 90 fathoms without being themselves disturbed. But as the red sandstones contain two thin coal-seams and a band of ironstone there is no doubt as to their true geological horizon. In the Clyde basin the unconformity is very gentle. The strata of both subdivisions are inclined in the same direction, and the discordance can only be determined by observing their relations over a considerable area.

Within the Silurian tableland of the Southern Up-lands there is an important basin of Carboniferous strata resting unconformably on the Silurian rocks, and forming the Sanguhar Coalfield. The strata claim special attention on account of the interesting story which they tell regarding the excavation of valleys in that ancient tableland and the extension of the true Coal-measures. From the relations of the younger Palæozoic rocks to the older series, it is clear that long before the Coal-measures were laid down the old tableland must have been carved into hills and valleys; in short, the valley of the Nith must have been a valley in Carboniferous time. At the south end of the basin there are some isolated patches of strata probably belonging to the Carboniferous Limestone, which in the adjoining basin of Thornhill are much more largely developed. In the latter district beds of limestone with marine organisms are associated with the sandstones and shales, but as we ascend the valley these representatives of the Carboniferous Limestone gradually disappear, till in the Sanguhar basin the Coal-measures rest directly on the Silurian rocks. These facts are highly suggestive, because when they are viewed in connection with the evidence given in the foregoing pages regarding the violent overlaps in the Carboniferous formation, they point to the conclusion

that the most elevated portion of the Silurian tableland must have lain to the south-west. We have no means of ascertaining the original extension of the Coal-measures across the old tableland, but it is safe to infer that the prolonged subsidence ultimately carried down beneath the waters a considerable part, at least, of the old land barrier. Quite recently, in a series of reefs at the Innimore of Ardnornish, Morvern, Professor Judd discovered a group of coarse white sandstones and shales charged with plant remains, along with thin and imperfect seams of coal. Among the plants, the following have been identified: *Lepidodendron aculeatum*, *Calamites Suckowii*, *Sigillaria*, and *Stigmaria*. The total thickness of strata does not exceed 50 feet, and on one side they are truncated by a fault, while on the other they are overlapped by the Poikilitic beds at the base of the Secondary Series. On the strength of the palæontological evidence, he regards this patch of strata as a fragment of the Carboniferous formation which has escaped denudation, and suggests that originally deposits of the same age may have had a great extension throughout the Highlands.

Permian System.—At the close of the Carboniferous period, powerful subterranean movements again ensued, which were eventually accompanied with striking manifestations of volcanic activity. The various deposits which had accumulated during the prolonged subsidence in Carboniferous time, were upheaved and subjected to considerable erosion. Indeed, in Fife there is clear evidence for maintaining that the Carboniferous strata must have been folded, dislocated, and extensively denuded before some of the Permian volcanic cones began to discharge showers of ashes. Partly from the lithological characters of the strata, and partly from the nature of the organic remains, Sir Andrew Ramsay has inferred that these subterranean movements resulted in the formation of inland lakes or enclosed basins, in which the Permian rocks were laid down. In short, the physical conditions must have resembled to some extent those which characterised the Old Red Sandstone period. That his ingenious suggestion is probably correct, will be better understood after a brief description of the nature of the deposits. In Scotland this formation is not so extensively developed as in England, neither is there the same variety in the strata. At present they form isolated basins at various localities in the south of Scotland, which were in all likelihood originally connected with each other: (1) in the centre of the Ayrshire Coalfield; (2) at Thornhill; (3) at Dumfries; (4) at Loch Ryan; (5) at Lockerbie; (6) at Moffat; while still another area, now regarded as Triassic, extends from the vale of Annan to the Canonbie Coalfield. Many of the red sandstone rocks of Arran appear to belong to this formation, while small outliers occur at Ballantrae and Loch Ryan. Not the least interesting of the rocks in these areas are the lavas and tuffs forming the base of the formation in Ayrshire. At this locality they form the rim of the basin, the centre of which is occupied by brick-red sandstones, exposed in the picturesque ravine in the river Ayr at Ballochmyle. Similar lavas occur at the base of the series in the Thornhill basin, and patches of the same volcanic rocks near Sanguhar have been referred to this horizon. Beyond the limits of the Permian basin of Ayrshire there is an interesting series of necks, representing the roots of the Permian volcanoes. A glance at the Geological Survey 1-inch Map (sheet 14) shows how a group of them is arranged in a linear manner along the banks of the Doon to the north of Dalmellington; and other examples are scattered over the Ayrshire basin. They pierce all the subdivisions of the Carboniferous system, and even the red sandstones resting uncon-

formably on the Coal-measures. They are now filled with coarse agglomerate, composed chiefly of blocks of diabase-porphyr. That these undoubtedly represent the pipes of old volcanoes has been amply proved in the course of the coal-mining operations of the district, for according to the researches of Professor James Geikie the seams of coal have been worked close to the necks, and in the immediate neighbourhood of the latter they display that alteration produced by contact with igneous materials.

The red sandstones overlying the diabase lavas in the Permian basin of Ayrshire have not yielded any organic remains, but they are distinguishable from the sandstones of the Carboniferous system by their brick-red colour. It is important to note also that these Permian rocks rest unconformably on the red sandstones forming the youngest member of the Carboniferous formation; hence there can be no doubt that they form an independent series, distinguished by peculiar lithological characters and by the absence of the Carboniferous fauna. In the other basins where the lavas and tuffs are absent, there is a peculiar brecciated conglomerate usually lying at the base of the series, and resting unconformably on the old Silurian platform, which deserves more than a mere passing allusion, because it probably indicates that glacial action must have had something to do with its accumulation. Many years ago, when studying the brecciated conglomerates of this age in England, Ramsay showed that they contained blocks striated in the same manner as stones in ordinary boulder clay, and from the appearances presented by the deposits and the assemblage of stones he inferred that they were of glacial origin, resembling modern glacial drifts. Recently the breccias of Moffatdale have yielded several excellent examples of striated stones analogous to those in the adjacent boulder clay. The blocks have been derived from the Silurian hills, and consist mainly of grits, greywackes, shales, and felstones; but along with these there are fragments of the Cement-stone Group with Lower Carboniferous fossils, to which reference has already been made. The breccias in the Dumfries basin have also yielded casts of fossils, indeterminate owing to their imperfect preservation, but which have evidently been obtained from Palaeozoic deposits previously removed by denudation. Overlying these basement beds we find a considerable thickness of red sandstones, largely in request for building purposes in the south of Scotland, which have yielded, near Dumfries and on Cornecockle Moor, an interesting series of footprints produced by animals moving along the sandy shores of the Permian lakes. No remains of the animals which frequented the shores of these old lakes have as yet been met with in Scotland, but in England the Labyrinthodont Amphibian, *Dasyceps Bucklandi*, has been unearthed at Kenilworth, and the true land reptiles, *Proterosaurius Speneri* and *P. Huxleyi*, have been obtained from the marl slate. In the sandstones of the vale of Eden pseudomorphous crystals of rock salt and deposits of gypsum occur, evidently indicating, as Ramsay suggested, the concentration of saline waters in inland lakes. We have no means of determining the original development of these deposits in the south of Scotland, but there can be little doubt that the old valleys must have been in great part filled with them, and that the various basins are merely isolated relics of widespread deposits. Various interesting facts tend to substantiate this conclusion. For example, the members of the Cement-stone Group along the shores of the Solway between the Dee and the Nith, and also in the neighbourhood of Canonbie, have been reddened by infiltration of iron oxide at the time when they lay buried under Permian strata. The same feature is observable

in the Silurian strata near Dumfries, at Lockerbie, and in Eskdalemuir. But perhaps a still more remarkable proof is the occurrence of a small outlier of breccia on the Silurian tableland between the village of Crawfordjohn and Leadhills. Composed of subangular blocks of Lower Silurian rocks, embedded in a red gritty paste, with little apparent stratification, the deposit recalls the peculiar breccias of the Moffat valley, and has been grouped with this formation by the officers of the Geological Survey. Though the evidence on which this correlation is based is comparatively slight, it is probably correct, and if so, then it points to a remarkable development of the Permian deposits.

Triassic System.—The strata which now fall to be described form the base of the great succession of Secondary formations, which are distinguished from the Palaeozoic rocks alike by their lithological characters and by their organic remains. The flora and fauna of the Secondary formations indicate a wide divergence from the types which flourished in such profusion in Palaeozoic time. Unfortunately, in Scotland these deposits now occupy very limited areas compared with their original extension, and the geologist labours under considerable disadvantages in attempting to unravel the physical conditions that prevailed during their deposition as well as their life history. But these very obstacles have only imparted an additional charm to the study of the Secondary rocks. Restricted as they are to the north-east coast of Scotland, the western seaboard of the Highlands, and the Inner Hebrides, they are closely linked with the geological history of the Highlands. No trace of any of the Secondary formations is now to be found in the Central Lowlands or in the Southern Uplands, not, indeed, till we reach the shores of the Solway; but their absence in these areas does not by any means negative the supposition that they may formerly have existed there.

Lithologically the Triassic strata bear a close resemblance to the Permian, and it has therefore been conjectured by Ramsay that similar continental conditions prevailed during this period. Indeed, from the great deposits of rock-salt associated with the Triassic sandstones of England, there are good grounds for accepting his suggestion that they were accumulated in vast inland basins. But though it is apparent that similar physical conditions prevailed during Triassic time, there is clear evidence to show that in England the Permian strata had been upheaved and extensively denuded before the Triassic sediments were laid down above them. In Scotland, however, the Permian rocks are nowhere overlain by later formations save the Pleistocene, and we have therefore no indication of the terrestrial movements which then ensued. A large patch of strata referred to the Trias, extends along the north shore of the Solway Firth east of the Nith, and several detached areas occur in the north of Scotland, of which the one at Elgin is the most important. At the latter locality the strata consist of grey and yellow sandstones, yielding a remarkable series of reptilian remains, which have been investigated by Professor Huxley and Mr E. T. Newton, and along with these sandstones there is to be found at various localities a cherty and calcareous band, well developed at Stotfield. The reptilian remains determined by Huxley belong to a crocodile which must have been about 18 feet long, and to two lizards, one about 10 inches and the other about 6 feet in length. The discovery of the remains of one of the lizards, namely, *Hyperodapedon*, in strata of Triassic age, in Devonshire, Warwickshire, and in Central India, led Professor Huxley to the conclusion that the reptiliferous sandstones of Elgin are of the same age—a correlation which has latterly been generally accepted. The reptilian remains investigated by

Mr Newton represent at least eight distinct skeletons, seven of which undoubtedly belong to the Dicynodontia, and one is a singular horned reptile new to science. These were obtained from the sandstone at Cutties-hillock quarry, near Elgin. One of the genera of Dicynodontia is named *Gordonia*, after the Rev. George Gordon, LL.D., of Birnie, whose researches in the natural history and geology of Moray are so widely known. '*Elginia mirabilis*' is the name proposed for the skull of a reptile which, on account of the extreme development of horns and spines, reminds one of the living lizards, *Moloch* and *Phrynosoma*. This peculiar skull seems to show affinities with Labyrinthodonts and Lacertilians, and is unlike any living or fossil form, its nearest, though distant ally being the *Paraisaurus* from the Karoo beds of South Africa.' It was formerly held that the reptiliferous strata may probably be a further development of the Upper Old Red Sandstone in the neighbourhood of Elgin. The latter yields scales and plates of the fishes characteristic of that period together with footprints, but no reptilian remains. The evidence is obscured by a vast accumulation of glacial and post-glacial deposits, and hence the difficulty hitherto felt in determining the stratigraphical relations of the beds. Recently, however, an interesting discovery has been made in the course of excavations for building purposes in a sandstone quarry on the Bishopmill ridge to the south of New-spyne church. The depth of this quarry is about 60 feet. In the upper part of the section about 15 feet of sandstone occurs, resembling the ordinary reptiliferous strata of that region, and yielding bones and other remains of reptiles. These beds rest on a pebbly grit or fine conglomerate about 6 feet thick. Underneath this band lie beds of sandstone containing the remains of the typical Upper Old Red Sandstone fish (*Holoptychius nobilissimus*), but as far as the excavations have gone no trace of the reptilian remains have been found associated with the ichthyolites. This section is of special interest, because it shows what geologists were long anxiously in search of, namely, the reptiliferous beds and the Upper Old Red Sandstone in contact with each other. From this section it is evident that the former are not brought into conjunction with the latter by means of a dislocation. The one series seems to rest unconformably on the other. This conclusion receives further support from the occurrence of Upper Old Red fish scales in flagstones far to the north, near Lossiemouth. Indeed the exposure of these flagstones suggests the idea that they may probably form a portion of the Upper Old Red Sandstone platform, protruding through a thin cake of the reptiliferous sandstones. At the base of the Secondary formations on the east coast of Sutherlandshire, between Dunrobin and Golspie, sandstones associated with a peculiar cherty calcareous rock are to be found, which are regarded by Professor Judd as the equivalents of the reptiliferous series of Moray, but this correlation has not been confirmed by the discovery of any reptilian remains in the beds at Golspie.

On the western seaboard of the Highlands various patches of conglomerates, breccias, and red sandstones are to be found occupying a similar horizon. Of these perhaps the most interesting is the outlier at Gruinard Bay, first detected by Macculloch, whose researches in the geology of the West Highlands at the beginning of the 19th century have earned for him an enduring reputation. At this locality they consist of brecciated conglomerates, argillaceous sandstones, variegated clays and marls overlain by red argillaceous and sandy beds, which have been thrown down by great dislocations against the Cambrian sandstones. None of the later

Secondary formations overlie these Triassic sandstones, but the representatives of this formation in Raasay, Sleat, and Ardnamurchan appear to graduate upwards into the Lias. This conformable succession is admirably seen at Ru-na-Leac, in the island of Raasay, where the strata occur in the following ascending order: (a) at the base, conglomerates with pebbles of quartzite, Cambrian sandstone and limestone associated with micaceous sandstone; (b) red clays and marls merging into sandstones and conglomerates; (c) mottled sandstones, calcareous in places, and containing fragments of limestone, graduating upwards into the Lias. Elsewhere, as for example, at Inch Kenneth, Gribun, Loch Aline, and Morvern, they are covered unconformably by Upper Cretaceous strata or by contemporaneous volcanic rocks of Tertiary age. No fossils have been found in the Triassic strata of the West Highlands save some casts of bivalve shells in a quarry at Ardnornish Towers. From the lithological characters of these rocks, from the presence of peroxide of iron and veins of gypsum in the sandstones, as well as the conspicuous dearth of fossils, it is evident that, like their English equivalents, they were deposited in inland lakes, and not in the open sea.

Jurassic System.—The Jurassic rocks of Scotland occur in areas far apart from each other, on the east coast of Sutherland, in the basin of the Moray Firth, along the western seaboard of the Highlands, and in the Inner Hebrides. A careful examination of the distribution and physical relations of the members of this system, within recent years, has amply proved that they are relics of deposits once extensively developed throughout the northern part of the kingdom, and that they have been preserved from complete demolition by remarkable geological phenomena. In the north-east of Scotland the largest and most important development of this formation occupies a narrow belt of ground, about 16 miles in length, on the coast of Sutherland, from Golspie to near the Ord of Caithness. Along their inland margin the strata are bounded by a fault or dislocation of great magnitude, which has allowed them to slip down, as it were, on the south-east side against the hard crystalline gneiss and schists with their associated igneous rocks. The very same relationship is observable in the case of the small patches of Jurassic rocks occurring at the base of the Ross-shire cliffs, to the north and south of the Sutors of Cromarty. Here they have been thrown down to the south-east against granitoid gneiss and highly inclined beds of Lower Old Red Sandstone by a powerful fault, which is probably a continuation of the dislocation traversing the Great Glen. As to the precise age of these great dislocations, we have no definite knowledge; all that we know for certain is, that they must be more recent than the Upper Oolite, inasmuch as these rocks have been affected by the movements, and have been brought into conjunction with the older strata. The direction of these two great faults, which run parallel with each other, is north-east and south-west, and it is probable, if not certain, that they belong to the same period. But it ought to be borne in mind that the fracture traversing the Great Glen is of much more ancient date, reaching back at least to Old Red Sandstone time, if not to an older period. The geological structure of the north-east portion of the Glen proves that the Lower Old Red Sandstone rocks have slipped downwards on the south-east side, the downthrow in this instance being in the same direction as at the base of the Ross-shire cliff on the west side of the Moray Firth. It is evident, therefore, that this ancient line of fracture must have been affected by subterranean movements at different geological periods, and that the last movement of which we have certain

knowledge must have been post-Jurassic. After a moment's reflection it will be manifest that before the Jurassic rocks were affected by these dislocations they must have extended far to the west of their present limits, but owing to the prolonged denudation of the northern Highlands at different geological periods, not a trace of these deposits is now to be found on the west side of the lines of fracture. Their preservation, therefore, on the Ross-shire and Sutherlandshire coast is directly due to those faults by means of which they have slipped downwards against harder rocks, and have been better able to resist the agents of denudation. No less remarkable is the method of preservation of the Jurassic and other Secondary strata of the Western Highlands, where they occur at intervals over an area measuring about 120 miles from north to south, and about 50 miles from east to west. Long after their formation they were buried under vast accumulations of sheets of lava, erupted during the Tertiary period, which now form grand terraced escarpments in Mull, Skye, and other islands. Round the edges of the volcanic plateaux, especially where the combined action of the sea and subaerial agencies have removed the overlying volcanic materials, or where the streams have cut deep trenches through the sheets of lava, the Secondary strata are exposed anew. In some cases, too, we find portions of the Secondary strata enclosed in great sheets of basalt, or it may be in the agglomerates and tufts ejected from the volcanic orifices of the period. By the study of these isolated and fragmentary sections it is possible to follow the geological history of our country through long cycles of time, and to correlate the deposits with the much more perfect series in England. From the time of Macculloch, whose geological map of the West Highlands is a monument of laborious research, these rocks have been studied by various investigators, including Murchison, Hay Cunningham, Edward Forbes, Sir A. Geikie, Wright, Bryce, Tate, Judd, and others. By far the most exhaustive contributions to the literature of the subject which have recently appeared have been made by Professor Judd, who has shown that on the east coast of Sutherlandshire and Ross-shire all the main subdivisions of the Jurassic system, from the Lower Lias to the Upper Oolite, with the exception of the Upper Lias, are represented; while in the West Highlands and Islands the sequence can be traced only from the Lower Lias to the Oxford Clay.* In the articles descriptive of the geology of Ross-shire, Sutherlandshire, and Skye, the lithological characters of the various zones of the Jurassic system, with their most characteristic fossils, have been given, and we shall therefore now point out certain striking features which distinguish the Scottish Jurassic rocks from their representatives in the south of England. In the latter region the lithological characters of the strata and the organic remains alike testify to the prevalence of marine conditions during the deposition of the various zones from the Lower Lias till at least about the middle of the Upper Oolite. The Portland and Purbeck beds indicate that the marine gradually gave place to estuarine conditions, and that a great change must have taken place in the physical geography of that region. But when the Jurassic rocks are traced northwards into Yorkshire, it is observable that the Lower Oolite is represented by sandstones, shales, thin coals, and ironstones, indicating unquestionably that these deposits must have been laid down in estuaries, thus contrasting with the marine conditions which existed during the deposition of the other members of this system in that area.

Still more conspicuously is this feature developed in Scotland, where there is a constant alternation of estuarine and marine strata, the former frequently predominating, and presenting considerable variations at different localities. This remarkable alternation is strikingly displayed in the north-east of Scotland in the zones ranging from the Lower Lias to the Upper Oolite, as shown by Professor Judd. Prominent among the estuarine strata are to be found conglomerates, sandstones, and shales; the sandstones exhibiting ripple marks and worm tracks, and containing abundant remains of plants and drifted wood. Associated with these are finely-laminated clays and bands of limestone charged with fresh-water shells, and occasionally with dwarfed marine forms; while seams of lignite and coal, sometimes of considerable thickness, are interbedded with the sandstones and clays. On the other hand, certain zones occur with the characteristic marine forms, showing that marine conditions must have prevailed at intervals. For example, the estuarine sandstones, conglomerates, and shales at the base of the Lower Lias in Sutherland are overlain by micaceous clays and shelly limestones, with characteristic marine forms; while the Lower Oolite is composed mainly of estuarine strata, consisting of sandstones, shales, and coals. On this latter horizon the well-known coal-seams are met with, one of them actually reaching a thickness of about 4 feet. Again, in the Middle Oolite there are several important marine zones alternating with estuarine strata; of the former, the 'roofbed' of the Main Coal seam is an excellent example, consisting of sandstone passing into a limestone, charged with *Ammonites* and *Belemnites*, the belonging to the horizon of the 'Kelloway Rock' in Yorkshire. Finally, the Upper Oolites are represented in Sutherland by a splendid development of sandstones, shales, grits, and brecciated conglomerates, indicating estuarine conditions, and probably the transportation seawards by ice-rafts of large masses of rock with trunks of trees. Indeed, from these observations it will be apparent that the sequence of physical conditions during Jurassic time in the Northern Highlands must have resembled to some extent those which prevailed during part of the Carboniferous period in Scotland.

When we compare the Jurassic strata of the West Highlands with their representatives on the east coast, the same recurrence of estuarine and marine conditions is observable, though in a less prominent form. At certain localities, sandstones and thin coal-seams are to be found at the base of the Lias, while between the Lower Oolite and the Oxford Clay a great estuarine series is intercalated, consisting of sandstones, shales with much carbonaceous matter, and limestones made up of comminuted shells. According to Professor Judd there are nearly 3000 feet of Jurassic rocks exposed in the West Highlands from the base of the Lias to the Oxford Clay, and if to this amount we add 1000 feet for the thickness of the Upper Oolite in Sutherlandshire, then the total thickness will be not far short of 4000 feet. The reader is referred to the papers communicated to the *Quarterly Journal of the Geological Society of London* by the authors already mentioned for detailed lists of the fossils obtained from the Jurassic rocks of Scotland. It will be sufficient for our present purpose if we indicate generally the nature of the flora and fauna, and some of the fossils characteristic of the prominent zones. The plants are represented by *Ferns*, *Equisetites*, *Cycads*, and *Conifers*. A graphic description of the Jurassic flora of Sutherlandshire is given in the last chapter of the *Testimony of the Rocks* by Hugh Miller, in which he shows that Scotland in Oolitic times must have had its mighty

* See *Quart. Jour. Geol. Soc.*, vol. xxix, p. 97; also vol. xxxiv, p. 660.

forests of pine. The plant which seems to bulk most largely in the coal-seams, as pointed out by Sir Roderick Murchison, is *Equisetites columnaris*. The fauna of the period is both rich and varied. The Corals are represented by the genus *Isastrea*; the Echinoderms comprised Sea-urchins and Crinoids, the former being represented by the genus *Cidaris*, and the latter by *Pentacrinus*. The Brachiopods are represented by the genera *Rhynchonella*, *Lingula*, *Spiriferina*, *Waldheimia*; the Lamellibranchs, which are particularly abundant, by *Avicula*, *Gryphaea*, *Inoceramus*, *Lima*, *Ostrea*, *Pecten*, *Plicatula*, *Arca*, *Cardinia*, *Cyrena*, *Nucula*, *Leda*, *Pholadomya*, *Unicardium*, *Trigonia*, *Unio*; the Gasteropods by the genera *Chemnitzia*, *Natica*, *Pleurotomaria*, *Tectaria*, *Melania*, *Paludina*; and the Cephalopods by *Ammonites* and *Belemnites*. The last order—namely, the Cephalopods—attained a great development, and from the classification of the Scottish Jurassic rocks adopted by Professor Judd it would appear that some of the prominent zones are characterised by the same species of *Ammonites* and *Belemnites* as their English equivalents. For example, in the West Highlands the Lower Lias is defined by the presence of *Ammonites Bucklandi*, *A. Conybeari*, *A. semicostatus*; the Middle Lias by *Ammonites armatus*, *A. Jamesoni*, *A. margaritatus*, *Belemnites elongatus*; the Upper Lias by *Ammonites communis*, *A. serpentinus*. The Lower Oolite is characterised by *Ammonites Murchisonae*, *A. Humphriesianus*, *Belemnites giganteus*; while the Oxford Clay yields *Belemnites sulcatus*, *B. gracilis*, and *Ammonites cordatus*.

Cretaceous System.—Between the Jurassic and Cretaceous strata of the West Highlands there is a great unconformability, indicating striking changes in the physical geography of the region, and extensive denudation of the deposits which had accumulated during previous periods. During this interval there must have been an elevation of the floor of the sea in the northern areas, and the various subaerial agencies must have removed in part the older Secondary strata which had been laid down on the tableland of the Highlands. When this elevation took place we have no precise means of ascertaining, but if we take the evidence supplied by the Sutherland sections in connection with that of the West Highlands, then we have a connected story up to the horizon of the Upper Oolite. As already stated, this latter group is not represented on the west coast, at least it has not as yet been detected in that region. The continuity of the geological record in the West Highlands is further interrupted by the absence of the representatives of the Weald and the Lower Greensand (Neocomian); for, according to Professor Judd, the lowest beds of the Cretaceous strata belong to the Upper Greensand, yielding *Nautilus Deslongchampsianus*, *Exogyra conica*, *Pecten asper*, *P. orbicularis*. These are overlain by estuarine sandstones, followed by beds of white chalk, with flints containing *Belemnitella mucronata*, and numerous fragments of *Inoceramus*; while at the top of the series occur sandstones and marls, with plant remains and thin seams of coal. From the character of the strata in this brief succession, it is evident that there must have been an alternation of estuarine and marine conditions similar to that which characterised the deposition of the Jurassic rocks. In the north-east of Scotland no Cretaceous strata have been found *in situ*, but there can be little doubt that they must have been deposited in that area from the number of smooth blocks of chalk and chalk flints, containing numerous fragments of *Inoceramus*, which are found in the drifts of Banffshire, Aberdeenshire, and other counties; indeed, it is not improbable that Cretaceous strata may occupy a portion of the bed of the Moray Firth.

Tertiary Volcanic Rocks.—At the close of the great series of Secondary formations there is a further blank in the geological history of Scotland. The records which we have now to consider reveal to us an era of extraordinary volcanic activity, when great sheets of lava were piled on each other to an enormous depth, and were spread over an extensive territory reaching from Antrim, by the Inner Hebrides, to the Faroe Isles and onwards to Iceland, where volcanoes are active at the present day. Visitors to the West of Scotland are familiar with the striking scenery associated with this volcanic episode, as displayed in the terraced basaltic plateaux of Mull and Skye, and the far-famed Fingal's Cave in the island of Staffa. Associated with this phase of volcanism there is a remarkable series of 'dykes' or fissures filled with basalt, which are traced from Yorkshire to Orkney, and from the north of Ireland to the east coast of Scotland—an area which is probably not much less than 40,000 square miles. A glance at the Geological Survey maps of the country will show how these dykes, on the whole, maintain a wonderfully straight course, how they pierce all older geological formations, including the chalk, and how they increase in number as we approach the edge of the basaltic plateaux. According to Professor Judd, there are in Mull, Skye, Rum, St Kilda, and Ardnamurchan, the relics of great extinct volcanoes and several minor cones belonging to three distinct periods of igneous activity. The first period was characterised by the discharge of acid lavas and ashes, the molten material consolidating into granite and syenite in the deeper portions of the craters; the second by the ejection of basaltic lavas, which, on reaching the surface, spread out in great horizontal sheets, but at the roots of the craters the igneous material crystallised into coarse dolerite and gabbro, like the rocks of the Coolin Hills; the third period was marked by the appearance of small sporadic cones in the neighbourhood of the extinct volcanoes, from which issued minor streams of lava. On the other hand, Sir A. Geikie contends that in the north of Ireland and in the long depression between the Outer Hebrides and the mainland of Scotland there was a copious outpouring of lava from the great system of parallel dykes, till wide tracts of country were buried to a depth of sometimes more than 3000 feet. Some of the vents of eruption, now filled with basalt, dolerite, or agglomerate, can be detected on the plateaux. In addition to the intrusive sills of dolerite there are two other series of intrusive masses, one of a basic, the other of an acid nature. The basic series consists of bosses of olivine-gabbro and allied rocks; the acid series includes trachytes, felsites, granophyres, and true granites. These acid rocks are believed by Sir A. Geikie to be the last of all the Tertiary volcanic series, except the latest basalt dykes which traverse them. The only organic evidence bearing on the age of the great basaltic plateaux is the occurrence of leaf beds between the old lava streams at Ardtun in Mull, discovered by the Duke of Argyll—a discovery of great interest and importance, as it revealed the nature of the vegetation of the period, and proved that the lavas must have been subaerial and not submarine. The plants grew in pond-like hollows on the surface of the lava during one of the pauses in the volcanic eruptions, and were eventually buried underneath successive streams of igneous material. Such is the origin of the beds of lignite occurring in the basaltic plateaux of the West Highlands and Antrim. From an examination of the plants found in Mull, comprising *Sequoia*, *Langsdorffii*, *Rhamnites major*, *Equisetum Campbellii*, *Corylus grosse-dentata*, *Cinnamomum*, *Platanites Hebridicus*, etc., Professor E. Forbes and Professor Heer concluded that they were of Miocene age. Quite recently, however, the suggestion

has been thrown out by Mr Starkie Gardner, that the flora may be of Eocene age.

A remarkable feature connected with the Miocene volcanic rocks is the striking evidence which they afford of the denudation of the country since that period. On the crests of Beinn-y-Hattan (2308 feet) and Beinn-y-Hun in Morvern there are small outlying patches of these basaltic lavas resting on Upper Cretaceous strata, while the latter rest unconformably on the metamorphic rocks of the Highlands. Originally these outlying patches were continuous with each other, and with the sheets lying farther to the west; but since that time deep valleys have been excavated in the old tableland by the simple agents of denudation. In short, the evidence points to the startling conclusion that the valley system of the Highlands has been excavated since Miocene time. It is also apparent that the valley system of the Southern Uplands has been sculptured since that period, from the fact that the basalt dykes cross hill and dale without the slightest indication of their having formed any lava flows in the bottoms of the valleys. Had the latter been in existence at that time, the molten lava would assuredly have issued from the fissures and flowed down the glens.

Though Pliocene deposits do not occur in Scotland, still several typical Crag shells, such as *Astarte mutabilis*, *Voluta Lamberti*, *Fusus contrarius*, etc., have been found by Mr Jamieson of Ellon in the glacial deposits of Aberdeenshire, thus indicating that originally they were laid down in that area, though they have been since removed by denudation.

Post-Tertiary Deposits.—The great series of glacial and post-glacial deposits, so typically developed in Scotland, forms one of the most fascinating chapters in the geological history of the country. Indeed, this branch of the science has proved so attractive, that quite a small army of observers have in recent years added largely to the literature of the subject. However desirous we might be to indicate the valuable researches of many well-known investigators of glacial geology, our space forbids us to do more than call attention to the publication of two important works ("Great Ice Age" and "Prehistoric Europe") by Professor James Geikie, in which the history of these deposits is admirably told. To these the reader is referred for a clear and forcible statement of the evidence bearing on the subject, and the strange story which it unfolds. The limits of this article preclude us from giving in detail the succession of the glacial and post-glacial deposits, and we shall therefore merely describe some of the geological changes which they indicate. From an examination of the glacial deposits, geologists are generally agreed that Scotland then experienced an Arctic climate, similar to that in Greenland at the present day. From the Highlands and the Southern Uplands glaciers descended, till eventually they coalesced and formed one continuous sheet of ice, which united with the ice-fields of England, Ireland, and Scandinavia. It was during this vast extension of the ice that the rounded outline of our hills was developed, rock-basins were excavated, and an extensive covering of boulder clay with striated stones was formed. The presence of stratified sands, gravels, clays, and peat with mammalian remains in the boulder clay, proves that milder conditions must have prevailed at long intervals, when the ice retired or disappeared from the surface of the country. Few, indeed, are the fossils

found in these stratified deposits, but such as they are they give us a glimpse of the climatic conditions which prevailed during interglacial periods. Then the mammoth, reindeer, horse, great ox, and Irish elk wandered along the valleys, and vegetation characteristic of cold temperate climes sprang up vigorously on the moors and hill slopes; the streams were busily at work in excavating hollows in the underlying boulder clay and laying down alluvial deposits of sand, gravel, and loam. From the report of the British Association Committee (1893) on the shell-bearing clay at Clava, near Inverness, there seems reasonable grounds for maintaining that it indicates a depression of the land of over 500 feet. The shells are chiefly shallow water species, and imply colder conditions than the present. The deposit is a true marine silt, and judging from the condition and assemblage of the shells it is probably *in situ*. The shelly boulder clay of Scotland is chiefly confined to maritime districts, and when compared with the development of unfossiliferous boulder clay it may truly be said that it occupies very limited areas. There are certain exceptions, however, where it is traceable over a wide extent of country, as for instance in Caithness and Orkney; but the detailed examination of the glacial phenomena of these counties leads to the conclusion that the shelly boulder clay was accumulated during the climax of glacial cold when the Scottish and Scandinavian ice-sheets coalesced on the floor of the North Sea and moved north-westwards to the Atlantic. The arctic shells were derived from the bed of the German Ocean and the Northern Firths, while the various blocks of Secondary rocks which are foreign to Caithness and Orkney were obtained from areas in the north-east of Scotland lying in the path of the ice. During the recession of the last ice-sheet vast quantities of sand, gravel, and boulders were accumulated in the valleys and plains now represented by the high-level terraces and torrential gravels. Many of the great moraines at the mouths of the Highland glens, and many of the tortuous kames in the low grounds, were formed during this retreat of the ice. After the glaciers had shrunk back to the mountain glens it would appear that the sea stood at a level of about 100 feet higher than at present, when the stratified clays and sands containing arctic shells were slowly deposited. During this stage some of our West Highland sea-lochs were probably occupied by glaciers. The boulders occasionally met with in this ancient beach, which have travelled far from their parent source, suggest the presence of masses of floating ice; while the curious crumpling of the finely laminated clays probably indicates that coast ice may have been driven along the shore by the prevailing winds. At length a movement of elevation supervened, when Britain was united to the Continent of Europe and the North Sea became dry land. Across this land passage the fauna and flora of Central Europe migrated to our hills and valleys; it was then that the new stone men took possession of the soil; it was during this Continental period that Scotland witnessed the great growth of forests. Geographical changes again ensued, the land was submerged, and Britain was fortunately severed from the Continent. Finally, the submergence gave place to a slow movement of upheaval, when the 50-foot and 25-feet beaches were eroded at successive stages in the elevation of the land. Such are some of the marvellous revolutions of climate which marked the close of the geological history of Scotland.

METEOROLOGY.

By ALEXANDER BUCHAN, M.A.

CLIMATE is that peculiar state of the atmosphere in regard to temperature and moisture which prevails in any given place, together with its other meteorological conditions generally in so far as they exert an influence on animal and vegetable life. The three principal elements which give their character to the various local climatologies of the country are height above the sea, the temperature, and the rainfall; the two latter of these elements being more specially considered with reference to the way in which they are distributed through the seasons.

In describing climate, the first place must unquestionably be given to the temperature of the district during the different months of the year, it being this which portrays the main features of the climate, and not the mean temperature of the whole year. Thus, while the annual temperature of the east and west coasts are nearly equal, the winter and summer temperatures are widely different. At Oban the winter and summer temperatures are $39^{\circ}4$ and $57^{\circ}2$, whereas at Barry, in Forfarshire, they are $37^{\circ}2$ and $59^{\circ}0$, the annual range of temperature being thus respectively $17^{\circ}8$ and $21^{\circ}8$. In this brief notice of our Scottish climate the remarks on temperature will be confined to January and July, inasmuch as they are representative of the two extreme seasons of the year. The accom-

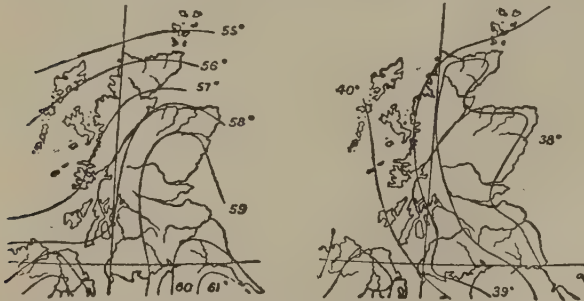
panying two small charts show the isothermal, or line of equal temperature, for these months, which thus offer in a handy form the climatic phases of the temperature.

Leaving the question of height out of consideration in the meantime, it will be seen from the isothermals that the lowest temperature occurs in the strictly inland parts of the country, the temperature being lowest at all places situated within the region marked off by the isothermal of $38^{\circ}0$. Along the whole of the eastern seaboard, from John o' Groat's southward, the temperature is higher than what is found a little way inland to westward. But it will be seen that the ameliorating influence of the North Sea is very much less potent than that of the Atlantic.

The Summer Temperature.—

Very different is the distribution of temperature in July from what obtains in January. Everywhere throughout the west temperature is lower than in the interior and in eastern districts. In winter the coldest climates are in inland situations; in summer, on the contrary, the warmest climates are in the central districts. The course taken by the isothermal of $59^{\circ}0$ over Scotland is extremely interesting. In the south-west the depressing influence of the Atlantic

in lowering the temperature is very strongly marked, and this influence is felt a very long way into the interior of the country; and the influence of the land, particularly of the high lands in the west, in depriving the south-westerly winds of their moisture, and thus clearing the skies of eastern districts, is marked in a manner equally striking, but in an opposite direction, in raising the temperature. From the head of the Solway Firth to Aberdeen northward temperature falls only $1^{\circ}0$, whereas for the same distance farther to the northward the summer temperature falls $3^{\circ}0$. Over eastern districts there is comparatively little difference of temperature from the Solway to the Moray Firth; whereas from the Mull of Galloway to Cape Wrath the difference is great. The summer isothermal of $56^{\circ}0$, as marking the northern limit of the successful cultivation of barley, deserves particular attention. To the north of this line the coarser varieties of barley and oats are cultivated, but the climate is decidedly better suited for the rearing of stock. The isothermal of $59^{\circ}0$ marks off that portion of Scotland where, owing to the higher temperature, diarrhoea and other bowel complaints raise the death-rate among



panying two small charts show the isothermal, or line of equal temperature, for these months, which thus offer in a handy form the climatic phases of the temperature.

The Winter Temperature.—The outstanding feature of the lines of winter temperature is their general north and south direction; and hence they are approximately parallel to the meridians and at right angles to the parallels of latitude. From this direction of the isothermals it is plain that the peculiar geographical distribution of the winter temperature is not determined by the sun, but is ruled by the ocean, which imparts its greater warmth to the climate by the prevailing westerly winds. The Atlantic may be regarded as a vast repository of heat, in which the higher temperature of the summer months, and in some degree that of more southern latitudes also, is treasured up in reserve against the rigours of winter. Further, during exceptionally cold seasons, the ocean effectually protects all places in its more immediate neighbourhood against such severe frosts as occur in inland situations.

Owing to the prevailing south-westerly winds, and

infants higher than elsewhere during the warmest months of the year.

The Rainfall.—The rainfall is determined by those causes which tend to lower the temperature of the air below the point of saturation, the chief of these being the march of temperature through the year, the character of the winds as regards moisture or dryness, and the physical configuration of the earth's surface over which they blow. Since with a rising temperature the capacity of the air to retain its moisture is increased, and with a falling temperature diminished, the smallest amount of rain might be expected in spring, and the heaviest and most frequent rains in autumn. Though observation confirms this expectation in a general way, yet in respect of particular months the rainfall by no means follows the annual variations of temperature owing to the interference of the seasonal changes of the prevailing winds.

Our prevailing south-westerly winds come laden with the moisture they have taken up from the Atlantic on their way; and losing heat as they proceed into higher latitudes, have consequently to part with some of the moisture with which they are charged. They are therefore, generally speaking, rainy winds. On the other hand, the north-easterly winds are very often dry and rainless winds, since being dry at the outset, and getting warmer as they proceed southward, their dryness is still further increased.

Taking the year as a whole, there is nearly twice as much wind from the south-west as from the north-east, but the proportions vary markedly with the different months. The south-west wind prevails most during July, August, September, and October, and again during December, January, and February. It is accordingly in these months that the rainfall is heaviest. It is here to be noted that these two periods are the summer and winter portions of the year, and one important consequence of the prevalence of the moist winds and accompanying rains which mark the annual extremes of temperature is to imprint a more strictly insular character on our Scottish climate by moderating the heat of summer and the cold of winter. In March, April, May, and June, and again in November, the north-east winds acquire their greatest frequency. These, accordingly, are the driest portions of the year.

If the physical configuration of Scotland was approximately level, the rainfall would everywhere on an average of years follow the temperature and prevailing winds, increasing with south-westerly winds and a falling temperature, and diminishing with north-easterly winds and a rising temperature. But the surface of Scotland is most mountainous, the principal mountain systems approaching the west, from which the more important valleys and plains spread out eastward to the North Sea, whilst on the other hand, to the westward, the valleys are steeper and much less extensive, and the course of the streams and rivers rapid and short.

When the south-westerly winds arrive on our coasts they are turned out of their horizontal course by the hills in the west, and being forced into the higher regions of the atmosphere their temperature is lowered, and the vapour is formed into clouds, and they deposit in rains the water which they can no longer hold in suspension. It is thus that the climate of the western districts of Scotland is essentially wet. On the other hand, the climate of eastern districts is dry, because the land there is more level and less elevated, and the clouds borne thither by the south-westerly winds have been already robbed of most of their superabundant moisture in crossing the western hills. It is evident that the driest climates in the east are those that have

between them and the Atlantic to south-westward the greatest extent of high mountainous ground; and the wettest eastern climates those regions which are least protected by high lands to westward. Thus the opening in the watershed between the Firths of Clyde and Forth exposes the whole of Western Perthshire, the counties of Clackmannan and Kinross, and a large portion of Fife to the rains and clouds of the west, and their climates are in consequence considerably wetter than those of any other of the eastern slopes of the country. On the other hand, the driest climates of the east are on the Tweed, about Kelso and Jedburgh, the low grounds of East Lothian, and those surrounding the Moray Firth from Elgin to Dornoch.

The rain-bringing winds from the south-west extend to a great height in the atmosphere, so that in the west the rainfall in similar situations closely follows the height. In the east, on the contrary, the rain-bringing easterly winds do not extend far inland, and they do not appear to reach any great height in the atmosphere. These easterly winds on certain occasions pour down over a comparatively narrow belt along the east coast deluges of rain such as occur nowhere in the west, except at places where the annual rainfall amounts to or exceeds 80 inches. In the west a fall of 2 inches in one day is a very rare occurrence at places whose annual rainfall is only 60 inches or under; whereas in the east, even in the driest districts, a daily fall of 2 inches not unfrequently occurs. A fall of 3 inches in one day has repeatedly been noted, and even 4 inches has been nearly reached, as in Edinburgh in August 1877. The greatest falls with easterly winds take place in comparatively narrow valleys looking eastwards at no great distance from the coast, and in flat low-lying districts. It is during the times of these heavy easterly rains that the clearest, finest weather is experienced in the West Highlands.

There is another class of very heavy rains often peculiarly disastrous to agriculture yet falling to be considered. These are the rains attendant on thunderstorms. In peculiarly western districts they seldom occur, and never in any excessive degree. In western climates thunder is a rare phenomenon in summer. It is in wide, extended, level straths and plains, at no great height, where thunderstorms most frequently occur in summer, and accordingly it is in such districts where the summer rains are heaviest, raising, indeed, the rainfall of the summer months to the maximum of the year. By these rains much damage is often done to growing crops.

As regards the health of the people, the greatest scourges of our Scottish climate are bronchitis, pneumonia, and other diseases of the air passages, which attain their maximum fatality in the winter; diarrhoea and other bowel complaints, which are most fatal, mainly among infants and the very aged, during the hottest season; and nervous complaints, including consumption, which go to swell the death-rate during the dry parching weather of spring when east winds prevail. The statistics of the Registrar-General show that when the temperature rises towards and above 60°, the mortality rapidly rises from the prevalence of bowel complaints; and that when it falls below 50°, the death-rate is largely augmented by an increasing fatality from throat complaints. The healthiest temperatures being thus from 50° to 60°, Scotland is climatically a healthy country, since for six months the temperature ranges between these degrees, and in summer seldom rises much above 60°, and in winter does not often fall to any very great degree below 50°.

The mildest climates for winter residences for invalids are to be found on the Clyde at Helensburgh, in

ZOOLOGY.

Bute, parts of Arran, and the seaboard of Ayrshire, where the rainfall is not excessive, and where the temperature is as high as it is anywhere in Great Britain, except the south-western counties of England and Wales. In spring the most desirable residences are, generally speaking, those situated at the greatest distances from the Continent, where the east winds are least severely felt, unless as in the case of the Bridge of Allan, which is sheltered by hills and wooded rising-grounds from the penetrating and enervating east winds.

The most enjoyable and bracing summer residences are in those districts where the height above the sea is 500 feet and upwards, and the rainfall moderate in

amount. The best of these are to be found on Upper Deeside, Upper Speyside, large portions of the east of Perthshire, and in the highlands of the south-eastern counties. To many, despite the heavy rainfall, the Western Highlands offer strong attractions in the total change of climate they afford, with its marvellous atmospheric effects of light, shade, and colour. Special reference may be made to the western regions of the counties of Ross and Sutherland, which, being sheltered by Skye and Lewis to westward, have a greatly diminished rainfall, and abound in the most striking and diversified scenery, ranging from stern grandeur to the softest and richest beauty.

ZOOLOGY.

By JOHN GIBSON, F.R.P.S.

SCOTLAND belongs to that great zoological region known as the Palearctic, which, extending from Ireland to Japan, comprehends all the temperate regions of the Eastern Hemisphere. Over this vast area the fauna, while exhibiting much specific diversity, shows such a generic similarity as sufficiently marks it off from the other zoological regions of the globe. Still greater similarity prevails in the fauna of each of the Palearctic sub-regions, so that few of the animals found in any one of the countries contained in a sub-region are peculiar to it. The Scottish, or what is very much the same thing, the British fauna, is found to be practically identical with that of the neighbouring Continent, inasmuch as it possesses exceedingly few species that are not found there. It differs, however, from that of the continental area of the European sub-region in the absence of many specific forms. The comparative poverty of Britain in species, and the similarity of such as there are with those of the Continent, can be most readily explained by a reference to the recent geological history of our island. Its existence as an island is comparatively recent. Prior to the glacial period it formed part of the European mainland, and its fauna then was similar to, and as rich in species as, that of contiguous France and Germany. During the latter part of the glacial period there is evidence that Britain sank until only its highest peaks remained above water—a submergence which must have extinguished most of its fauna. It rose again from the waters as the glacial period passed away, until once more it became part of the Continent. The animals of the latter then migrated into Britain and gave origin to its existing fauna. How long this latest connection of Britain with the mainland lasted is not known. It did not endure long enough, however, to allow of the migration of all the species of continental animals into the new area. The similarity of the British and European faunas is thus regarded by such competent authorities as Mr A. R. Wallace to be due to the existence at one time of a land connection between the two, while the absence of so many continental species from the British fauna is attributed to the removal of this land-bridge before all the animal migrants had time to cross. This poverty is most marked in the case of mammals and reptiles; these, with the exception of the bats, not possessing the power of flight. Thus while Germany has about 90 species of land mammals, and Scandinavia 60, Britain has only 40. The latter also has only 13 species of reptiles and amphibia, while the nearest continental land has 22. Each of these British species occurs also on the Continent, and it is the opinion of com-

petent authorities that our island does not contain even a single variety of mammal, reptile, or amphibian that is peculiar to it. It is somewhat remarkable that it is among birds, fish, and insects—creatures to whose migration the narrow sea separating Britain from the Continent might be supposed to form no effectual barrier—that species and varieties peculiar to Britain occur. It is difficult to deal with the fauna of Scotland as distinct from that of the rest of the island. There are many species, however, especially among the invertebrata, which are exceedingly local in their distribution, and which, occurring in England or Scotland, have not yet been found in both. There are some also which, occurring abundantly in the one division of the island, are found but rarely in the other; nor is this surprising in view of the very considerable physical differences between the two—the mountainous character, for example, of the one, and the level nature of the other. There are others, again, which have obtained a place in the British fauna through an occurrence so rare in any part of the island as to justify their classification as ‘accidental visitors.’ Attention will be specially directed in the following account to such species as are either peculiar to or have their British headquarters in Scotland.

MAMMALIA.—In a country so thickly peopled as the United Kingdom it is impossible for the larger mammals to continue to exist in a wild state unless protected by man. The wolf and the bear have thus been exterminated in Britain during the historic period, and the various species of deer, the fox, and probably also the hare, would have shared the same fate had they not been protected by game-laws and otherwise. It is the smaller mammals—rats, mice, and rabbits, for example—that are best able to hold their own against civilised man. Seventy-three species of mammals have been found in the British Isles and their surrounding waters; many of these, however, must be regarded as accidental visitors, having only been observed on one or two occasions. Of the 14 species of British bats only 3 are known to be Scottish—namely, the Common Bat (*Scotophilus pipistrellus*), Daubenton's Bat (*Vespertilio Daubentonii*), and the Long-eared Bat (*Plecotus auritus*). The milder climate and more abundant insect life of England as compared with Scotland render the former country more favourable to bat life; but the disparity in the number of species found in the two countries is probably due in some measure to the fact that the *Cheiroptera* have not been so thoroughly studied in Scotland. Of the 5 species of British *Insectivora* 4 occur in Scotland—viz., the hedgehog, mole, common shrew, and water-

shrew. The hedgehog is not found in the north of Scotland nor in the islands, while the mole is also absent from the north of Scotland and from the Orkney and Shetland Islands. The latter is one of the farmers' foes, doing great injury by its subterranean burrows to growing crops; it has consequently been the object of the most untiring persecution. There is no evidence, however, that the agriculturist is doing more than keeping the numbers of the mole in check. There are 15 species of British *Carnivora*, 13 of which are Scottish. The badger, as might be expected from its comparatively large size, is becoming a rare animal in Scotland. The otter is also decreasing in numbers, although its aquatic habits give it a greater chance of survival. In the north of Scotland and in the Shetland Islands it is said to frequent the sea, and to proceed a considerable distance from the shore. The common weasel, the ermine, polecat, common and pine martens, are all found in considerable numbers in Scotland. The ermine in the Highlands assumes in winter the pure white fur—always excepting the tip of the tail—which in lowland districts it only partially acquires. The pine marten is the common species in Scotland, as the common marten is in England. The wild cat, which is quite a distinct species from the domestic form, is now found in greatest abundance in the Highlands of Scotland, especially in the counties of Inverness, Ross, and Sutherland. It is frequently caught in rabbit-traps, to which and to gamekeepers it is fast falling a prey. The fox survives in Scotland owing chiefly to the protection afforded it in the interests of sport. Of marine *Carnivora* the two Scottish species are the common seal and the grey seal, neither of which occurs in such abundance as to render its pursuit an object of commerce. The common seal is very abundant among the Scottish isles, especially in the Orkneys and Shetlands, and great numbers of them are annually killed. They frequent shores and estuaries, and the salmon and sea trout possess no greater enemies than these voracious creatures. Of the 13 British species of *Rodentia* 12 are common to Scotland. The squirrel, according to Mr Harvie-Brown, had become almost extinct in Scotland owing to curtailment of forest ground. In comparatively recent years it has again spread from England northward, until now it is probably as widespread and as injurious to forest trees as at any former period. The black rat is interesting as being the indigenous British species. It is still found in a few localities in Scotland, but is fast dying out before the brown rat. The latter species is believed to have been introduced into this country from the East so late as the middle of the 18th century. Now it is as widespread as man himself, and wherever it goes it drives out the black rat. The hare probably owes its survival in the midst of a dense and civilised population to the protection of English game-laws. The rabbit has also benefited somewhat by the same, but it is doubtful whether, having regard to its burrowing habits and its extraordinary powers of reproduction, it could be exterminated. The Australian and New Zealand colonists, at all events, have failed to destroy it after the most strenuous efforts. The rabbit is not indigenous to Britain, it having been introduced at an early period from the south of Europe. An interesting species is the mountain hare, which in Britain only occurs in Scotland. As found in the Highlands, it is of a fulvous grey colour in summer, but becomes perfectly white in winter. It has of late years been introduced into the Lowlands, and there it has been observed that the change to white in winter is only partial. There are four species of British *Ruminantia*, all of which occur in Scotland. The white cattle of Cadzow Forest

are regarded by some naturalists as the unsubdued descendants of the ancient *Urus*; by others merely as an ancient fancy breed of domesticated cattle preserved for their beauty in the parks of the nobility. That the *Urus* abounded at one time in Britain is proved by the numerous remains of it that have been found especially in Scotland, and Professor Rutimeyer regards the semi-wild form of Cadzow Forest as making the nearest approach of all the breeds of oxen to the true *Urus* type. True, it is much smaller, but this may be accounted for by less favourable conditions of existence and too close interbreeding. They are of a pure white colour with the exception of the muzzle, the tips of the horns, the ears, and the hoofs, which are black. This uniformity of colour, however, is only obtained by the destruction of all the calves that deviate from it. Scotland is *par excellence* the home of the British deer. The fallow deer is no doubt more common in England, but it is a semi-domesticated species, and is not a native of Britain. It came originally from Southern Europe, and is supposed to have been introduced into England by the Romans. The roe-deer was in Pennant's time restricted to the highlands of Scotland north of Perthshire. It has since, owing to the increase of plantations, extended its range through the south of Scotland and north of England. The red deer is likewise confined chiefly to the Scottish Highlands, where large tracts of land have been turned into deer forests. It is not now found in the Orkney and Shetland Islands, although the numerous antlers dug out of their bogs show that it formerly abounded there. The antlers preserved in ancient Scottish castles, and still more those found buried in mosses and submerged forests, show that in early times the stag attained a greater size and developed heavier and more branching antlers than it does now. This degeneration is probably due to the restriction of its feeding grounds, to the barren mountainous character of much of the deer-forest land, and to excessive interbreeding. To the latter cause also is attributed the frequent occurrence of mal-formed horns. Of the remaining order of Mammalia—the Cetacea, or whales and dolphins—no fewer than 22 species are chronicled as having been found in British waters, 16 of these being Scottish. Many of them, however, are the merest stragglers driven on our shores by stress of weather or by sickness. A Humpbacked Whale (*Megaptera longimana*)—the first recorded Scottish example—was taken off the mouth of the Tay in 1883. The Rorqual occurs not unfrequently off the Orkney and Shetland Islands, and occasionally on the Scottish coast. Less frequently occur Sibbald's Rorqual, the Lesser Rorqual, the sperm whale, Cuvier's and Sowerby's whales, and the Narwhal. The pilot whale, the porpoise, the dolphin, the grampus, and the bottlenose whale are the cetaceans which occur in greatest abundance on the Scottish coast. Several of these occur in schools, and when noticed they are chased and captured in large numbers by the fishermen. The value of the blubber thus obtained, however, is trifling compared with the damage done by these cetaceans to the fisheries. Whales of various species may be seen encircling herring shoals and eating their way into the compact mass. Cromarty Bay has been seen alive for days with the spouting of hundreds of large-sized whales.

AVES.—The birds of the British Isles are, with a single exception, all found on the continent of Europe. The one exclusively British species is the Red Grouse (*Lagopus Scoticus*), found in greatest abundance on Scottish moors. The Willow Grouse (*Lagopus albus*) of Northern Europe, its nearest continental ally, differs from it chiefly in assuming white plumage in winter.

It is not improbable, as Professor Newton suggests, that at a not very remote time, geologically speaking, these two species of grouse had a common ancestor, and that the severe winters to which the willow grouse has since been subjected has led to its assumption of a snow-white garb in winter. Some ornithologists regard the British cole tit (*Parus britannica*) as distinct from the continental form, from which it can be readily distinguished by its darker colour. Gradations of shade connecting the two forms have, however, been obtained—thus proving that the British is but an insular variety of the continental form. Probably the same thing may be said of the wren brought from St Kilda by Mr C. Dixon in 1884, which has been described and figured by Seebohm as a new species—*Troglodytes hirtensis*. A skilled ornithologist can usually tell by looking at the skin of a European bird whether it is a British or a continental specimen, the plumage in the former case being as a rule darker and duller than in the latter. This curious difference is, no doubt, connected in some mysterious way with our insular climate. The study of British ornithology has long been zealously pursued, with the result that more is known regarding the haunts and habits of our birds than of any other group of 'home' animals. The list of British birds contains altogether about 382 species; 160 of these, however, can only be regarded as accidental visitors, many of them having only been observed on one or two occasions in Britain. Of these wanderers, Mr Seebohm calculates that 97 of the species have visited us from Europe, 45 from America, and 18 from Asia. The remaining 222 species are resident in Britain, but not more than a half of these remain with us all the year round. Many species are merely winter visitors, which, having their summer haunts and breeding quarters in Arctic regions, migrate southward in the autumn and fly homeward again in spring. Some, like the swallows, are summer visitants which, after rearing their brood in Britain, retire towards the equator on the approach of winter. Others again are merely 'birds of passage,' which twice a year—in spring and autumn—may be observed passing across our land, but not residing in it. The number of species of birds that have been noticed in Scotland, whether resident, birds of passage, or stragglers, is about 310. Mr Gray, in his admirable work on the *Birds of the West of Scotland*, enumerates 302 species, and since the publication of that work in 1871 several species have been added. These include the stock dove, dusky shearwater, Pallas's shrike, squacco heron, and desert chat.

The greatest difficulty has been experienced by naturalists in devising a natural classification of birds, so far at least as the Orders are concerned. In the absence of any generally adopted natural system, it will be most convenient to arrange the Scottish birds under the well-known, if somewhat artificial, Orders originally proposed by Kirby. These are—

<i>Raptores</i> , or birds of prey,	31	Scottish species.
<i>Insessores</i> , or perchers,	103	"
<i>Scansores</i> , or climbers,	4	"
<i>Rasores</i> , or scratchers,	15	"
<i>Grallatores</i> , or waders,	65	"
<i>Natatores</i> , or swimmers,	88	"

Of Scottish 'birds of prey' there are 31 species, 9 of these being owls. They are the enemies of 'game,' and as such have been subjected to the most relentless persecution at the hands of gamekeepers. The result is, that almost all our birds of prey are becoming scarcer, while most of the larger species are fast approaching extinction in Britain. The eryies of the golden eagle are now for the most part confined to the Outer Hebrides and to the northern counties of Scot-

land. Of late years, however, owing to the general outcry against the extirpation of this noble bird, it has been taken to some extent under the protection of Highland lairds, and seems to be again on the increase in Scotland. The white-tailed eagle, which a few years ago was much commoner than the golden eagle, is now probably the rarer form. The goshawk, osprey, and kite, all formerly common in Scotland, are now exceedingly rare, although smaller species, as the sparrowhawk, kestrel, and peregrine, seem to be holding their ground. The owls, of which the commonest Scottish species are the barn owl, the tawny owl, and the short-eared owl, are less liable to attack than their day-flying neighbours, owing to their nocturnal habits. They are also useful as vermin-killers, mice and 'such small deer' forming their favourite food. Two of the largest of known owls occur in Scotland—viz., the eagle owl and the snowy owl, both of which are found occasionally in the Orkney and Shetland Islands, the former being a rare, and the latter a regular, visitant. The snowy owl is also a regular visitant to the Outer Hebrides, but there is reason to believe that specimens taken on the west side of Scotland are migrants from Canada, while such as are found on the east side have probably crossed from Scandinavia, where the snowy owl is known to breed. The *Insessores* are the typical birds, and include the thrushes, warblers, tits, crows, shrikes, starlings, finches, swallows, wagtails, and larks. They are almost all small birds, the largest being the raven. The raven is fast ceasing to be an English bird, but is still fairly common in the Highlands and Islands of Scotland. The chough, another member of the crow family, was once common on many parts of the mainland of Scotland, but is now confined to the western isles, where it builds its nest on precipitous cliffs. The jackdaw, on the other hand, is said to be increasing. The same may also be said of the starling. Forty years ago, according to Mr Gray, it was comparatively a scarce bird throughout the mainland of Scotland; now it is found, like the sparrow, abundant in the neighbourhood of every town. One of the most interesting of the irregular visitors to Scotland belonging to this Order is the Bohemian waxwing. Not a season passes without its occurrence being noted, but occasionally it appears in extraordinary numbers, as it did for example in the winter of 1866-67. It breeds in Lapland, and its visits to this country in large flocks are supposed to be due to scarcity of food in its usual winter quarters owing to exceptionally heavy falls of snow. Of the *Scansores* there are only four Scottish species, none of which are very common. The best known and most generally distributed is the cuckoo—a summer visitant most common in the west of Scotland. The nest of the meadow pipit is the one most commonly chosen by this bird as the receptacle for its eggs. The green and great spotted woodpeckers are both rare in Scotland, although the latter breeds in Banff, Aberdeen, and Inverness. The fourth species is that curious bird the wryneck, which has been known to breed in Scotland—in the district of Nether Lochaber—but is rare in any part of the country. The *Rasores* include pigeons, grouse, pheasants, and partridges. The rock dove, regarded as the original wild form of all the domesticated varieties of pigeon, is specially abundant on the west coast and islands of Scotland, breeding in vast numbers in the sea-washed caves of that rocky coast. It even occurs so far from the mainland as St Kilda, from which it is said to make daily excursions to the Hebrides for food. The stock dove has only been noticed of late years in Scotland, but as it was found breeding in Berwickshire in 1878 it will probably become more widely spread. The capercaillie in the British islands is confined to Scot-

land, and is chiefly found in the counties of Perth and Forfar, from which, however, as a centre, it is gradually spreading into the wooded districts of the neighbouring counties. This bird, there is reason to believe, became altogether extinct in Britain towards the close of the 18th century, and the existing capercaillies are the descendants of birds introduced from Norway by Sir T. Fowell Buxton in 1837. The ptarmigan is another British species confined to Scotland. It is only found on the higher grounds in the Highlands, and does not extend farther south than the island of Arran. In winter its plumage changes from a greyish lichen-like colour to pure white, its garb both in summer and winter being eminently protective through its resemblance to surrounding objects. The red grouse is, as already stated, the national bird of Britain, being the only species not found elsewhere. While it remains so highly prized and protected for sporting purposes, there is not much danger of Britain losing its one ornithic treasure. The common pheasant is a semi-domesticated species introduced into this country probably by the Romans, its true home being the region about the Caspian and Black Seas. Of late a still showier species has been introduced—viz., Reeves's pheasant, remarkable for the enormous length and beauty of two of its tail feathers, each of these being nearly 4 feet in length. Pallas's sand grouse is one of Scotland's accidental visitors. This bird has its home in Central Asia, but occasionally, whether by an error, as Mr Seebohm suggests, in the direction of migration, or through unusually severe weather in its usual haunts, it reaches Europe in spring-time in vast numbers. The greatest visitation of these birds on record occurred in 1863, when in Scotland alone flocks of twenty at a time were seen, and they continued to be noticed in various parts of the country from May till October. The Order *Grallatores* includes bustards, plovers, herons, bitterns, storks, sandpipers, curlews, phalaropes, and coots. At one time the great bustard bred in Britain; now it is a very rare visitant. In Mr Seebohm's valuable work on *British Birds*, it is stated that there is no record of the occurrence of the squacco heron in Scotland. He has, however, overlooked the notice of its occurrence at Dalmahoy, near Ratho, where a specimen (now in the Edinburgh Museum of Science and Art) was shot in or about 1877. The heron is still a comparatively common bird throughout Scotland, but more especially on the west coast, where, according to Mr Gray, heronries occur at intervals from the north-west of Sutherland to Wigtownshire. The bittern, on the other hand, is becoming very rare, and is not known now to breed in any part of Scotland. The 88 species of Scottish *Natatores* include geese, swans, ducks, divers, grebes, auks, gulls, and terns. The west coast of Scotland, with its numerous islands, deep sheltered inlets, precipitous cliffs, abundance of fish life, and paucity of population, is the chosen home of British wild-fowl. The wild goose, which formerly bred in marshy tracts throughout the mainland of Britain, is now almost confined during the breeding season to the islands of the Outer Hebrides. The white-fronted goose has its headquarters in Islay, and the eider duck is found in greatest abundance in Colonsay. The puffin is said by Mr Gray to be probably the most abundant species of sea-fowl to be met with in the west of Scotland. A bird which formerly occurred, possibly in large numbers on the west coast, was the great auk, which, it is to be feared, must now be removed from the lists of birds existing in this or any other country. The last living Scottish specimen was obtained near St Kilda in 1822, and was handed over alive to Professor Fleming, at that time yachting among the Hebrides. With a rope attached to one of its legs it was allowed a

daily bath in its own element, but on one of these occasions it got loose and escaped. Remains of the great auk have been found in Caithness and Oronsay. Many of the gulls breed some distance inland, and the extensive moors of the Highlands, with their lochs and tarns and numerous marshy islets, form splendid nurseries for these and other kinds of wild-fowl. The great skua is occasionally obtained during its migration on all parts of the coast, but its only breeding-places in Scotland are in the Shetland Islands, and chiefly in Unst and Foula. Of the terns the Arctic tern is now found to be the most abundant in Scotland, and not the so-called common tern, which, however, occurs most commonly in England and Ireland. One of the most characteristic of Scottish birds is the solan goose. It has five breeding stations in Scotland—viz., Ailsa Craig, St Kilda, North Barra, Stack of Suleskerry, 40 miles west of Stromness, and the Bass Rock. It exists on these stations in immense hosts during the breeding season, and as the gannets feed entirely on fish, such as haddock, whiting, and herring, they are no mean competitors with man in securing the harvest of the sea.

REPTILIA AND AMPHIBIA.—As already stated, the vertebrate fauna of Great Britain offers the greatest contrast to that of the European continent in the comparatively small number of its reptiles and amphibians. Belgium, for example, has 22 species, while Britain has only 13, and Ireland 4. This poverty of species in Britain is most probably due to the removal of its land connection with the Continent, which prevented any further migration of those undesirable members of the European fauna. It must be presumed, in explanation of the still greater poverty of Ireland in this matter, that only 4 of the British species of reptiles and amphibians had reached so far west as Ireland when the latter became detached from the mainland of Britain. Scotland possesses most of the British species. Among incidental visitors belonging to this class is the hawk's-bill turtle, a specimen of which is stated by Dr Fleming to have been taken at Papa Stour, in Shetland. Of Scottish lizards there are only two species, the viviparous lizard and the slow-worm. The former may be found on heaths in most parts of the lowlands, and the writer has taken it as far north as the island of Colonsay. It is an exceedingly active and agile creature, and if caught by the tail does not hesitate to part with that organ in order to get free. This brittleness of tail is common to all lizards. The slow-worm is not a snake, as many suppose, but a lizard without legs. It is found in most parts of Scotland, and is, like the lizard, a timid, inoffensive creature, disinclined to bite, and perfectly innocuous if it did. It owes its specific name *fragilis* to its extreme brittleness. It so stiffens itself through fear when caught, that it readily breaks in two if any attempt be made to bend it. Of Scottish snakes there are two—the viper and the ringed snake. The latter is of extremely rare occurrence in Scotland, although very common in England. It is without poison fangs, and is therefore perfectly innocuous. It is an excellent vermin-killer, and is often kept as a pet. The viper is *par excellence* the Scottish snake, and is the only venomous reptile in Britain. It is readily distinguished from the ringed snake by the greater breadth of the V-shaped marking of its head, and the confluent series of lozenge-shaped black spots running along its back. It is possessed of fangs, the poison from which, when injected into the human blood system, produces serious results. In the case of healthy adults the bite of the British adder rarely, if ever, proves fatal. With the young and the infirm, however, death has been known in several instances to have resulted from this cause. They occur in dry heaths and waste places throughout the Highlands, but are by no means

common anywhere in Britain. They avoid man whenever it is possible, and the only danger of getting bitten is by treading on them unawares. Of *Amphibia* there are 6 species found in Scotland—viz., 1 frog, 2 toads, and 3 newts. The common frog is an inhabitant of marshy grounds throughout Britain. Its eggs are deposited at the bottom of water, and the young when they leave the egg are purely aquatic animals. These tadpoles, as they are called, breathe by gills, and being without limbs swim like fishes. As they grow older limbs begin to appear and the tail to disappear, while the gills give place to air-breathing lungs. When these changes are completed the young frog leaves the water and spends thereafter an amphibious existence. Frogs live chiefly on worms and insects, and in winter time, when these are not to be had, they congregate in great numbers in the muddy bottoms of pools, and burying themselves in the mud, they hibernate. A large frog occurs in many parts of Scotland, being specially abundant in the neighbourhood of Edinburgh. This at one time was described as identical with the edible frog of the Continent. Bell, the author of a work on *British Reptiles*, examined specimens of it, and declared it to be a new species, which he named *Rana Scotica*. Further examination, however, of a large number of specimens obtained from the Braid Hills, near Edinburgh, convinced him that after all it was merely a large variety of the common frog. The true edible frog does not occur in Scotland, although it is found in England. The toad, like the frog, is generally distributed over the country. Its form is not prepossessing, and this has led to the attributing of poisonous qualities to it. Than the toad, however, there is no more inoffensive animal; and any one who cares to make a pet of it, as the writer has done, will find much to interest in the study of its habits. Stories that have been told regarding the finding of frogs and toads inclosed in solid rock—that rock being frequently of Carboniferous age—will not bear the slightest scientific scrutiny. No one with any intelligent appreciation of the time that has elapsed since even the newest rocks were formed can entertain the possibility of such an occurrence. The Natter Jack toad is a more active creature than the common species. In Scotland it occurs only in marshes on the shores of the Solway Firth, where, however, according to Sir Wm. Jardine, it is very abundant. The newts differ from frogs and toads in retaining the tail throughout life. They are also much more aquatic, only leaving the water in autumn when their period of hibernation is approaching. The warty newt, the smooth newt, and the palmated smooth newt are the three Scottish species. They are more or less common in ponds and ditches throughout Britain, where they feed chiefly on aquatic insects and worms. The warty newt also devours the tadpoles of the frog, whose numbers it thus helps to keep down.

PISCES.—There are no fewer than 15 species of fishes altogether peculiar to the British Islands. As might be expected, however, these are all fresh-water forms, and most of them inhabit lakes, to which, owing to the barriers to migration, they are frequently confined. They belong exclusively to the family *Salmonidae*, and while Dr Günther regards them all as good and distinct species, many of them are regarded by Dr Day in his new work on *British Fishes* (1884) as mere varieties chiefly of the salmon and the trout. Three at least of the 15 species may be regarded as specially Scottish—viz., the Loch Stennis Trout (*Salmo arcadensis*), found only in the small lakes on the mainland of Orkney. The Loch Leven Trout (*Salmo levenensis*), formerly confined to Loch Leven, but now spread all over the kingdom by means of eggs artificially hatched at Howietoun, Stirlingshire. It is regarded

by many as a land-locked variety of the sea-trout, Loch Leven having had at one time a connection with the sea sufficient to allow of the passage to and from it of the salmon and sea trout. Such connection no longer exists, and the Loch Leven trout may, it is conjectured, be the descendants of sea trout altered to suit their land-locked condition. A still more remarkable instance of restricted distribution is to be found in the Vendace, which occurs in two small lakes near Lochmaben in Dumfriesshire. It is a fish about 9 inches in length, and is considered a great delicacy in the locality. Other forms of *Salmonidae* found in Scottish and English lakes are the poven of Loch Lomond, the black-finned trout, and the great lake trout. There are altogether 25 species of fresh-water fishes found in Scotland, exclusive of such forms as the salmon and sea trout, which pass a portion of their lives in the sea. There are many fresh-water fishes, however, more or less tolerant of salt or brackish water, as the minnow, eel, and river lamprey. On the other hand, many of the British marine fishes, as the flounder and the sticklebacks, can tolerate brackish and even fresh water. The grayling is an English river fish that has been introduced of late years into Scotland. It is now thriving in the Clyde, Tweed, and Teviot. Of marine fishes no fewer than 165 species have been taken off the Scottish coast; many of these, however, are to be regarded as merely accidental visitors. They belong to the following Orders:—

Acanthopterygii,	72 species.
Anacanthini,	38 "
Physostomi,	15 "
Lophobranchii,	6 "
Plectognathi,	4 "
Ganoidei,	1 "
Elasmobranchii,	26 "
Cyclostomata,	2 "
Leptocephali,	1 "

The Acanthopterygians, or spiny-rayed fishes, although the most numerous in species, contain few that are of importance to man. The most important economically is the mackerel, which appears off the Scottish coast late in summer. Other food fishes of this Order found in our waters are the mullets, gurnards, sea-bream, and John Dory. The latter is a rare fish in Scotland, not more than one or two being caught in the Firth of Forth in the course of a year. The flesh of the wolf-fish is usually sold in Scotch markets as John Dory, and in the west of Scotland the sea-bream is also known by that name. The only Scottish fresh-water fish belonging to this Order is the perch, found plentifully in lakes, ponds, and rivers south of the Forth. The *Anacanthini*, or spineless fishes, are *par excellence* the food fishes of the world, and Scotland possesses the most important species. These include the cod, haddock, whiting, ling, hake, coalfish, and torsk among the *Gadide*, and the turbot, sole, halibut, plaice, and flounder among the *Pleuronectidae*, or flat fishes. The latter are generally found on sandy bottoms, and in Scotland they are especially abundant in the estuaries of the east coast. The sole is not a plentiful species in Scottish waters. The *Physostomi* include the salmon and herring families. In the Tweed and Tay Scotland possesses the two finest salmon rivers in Britain; while its herring fishery is the most valuable industry of the kind in the world. The herring visits the Scottish coast twice in the year for spawning purposes—namely, in spring and autumn. That they are never wholly absent is proved by the fact that the herring is found at all seasons in the stomach of the cod. It is during the autumn spawning that the chief herring harvest is gathered; but in early spring, when the herring is spawning on the Ballantrae Bank, off Girvan, an im-

portant fishery is carried on. Other species of *Clupeidae* found in Scotland are the sprat, pilchard, and shad. The Lophobranchs comprise the pipe-fishes, of which there are five Scottish species, and the Hippocampus, or sea-horse. The latter has obtained a place in our fauna through the finding of a dead specimen in the Orkneys, and of two cast ashore at Banff after a storm. The pipe-fishes are remarkable from the fact that the males have a pouch in which the eggs of the female are placed, and in which they remain until hatched. The *Plectognathi* include such stray visitors from warm seas as the file-fish and globe-fish; also two species of sun-fish, which are more at home in Scottish waters. These are occasionally captured as they lie basking in the sun on the surface of the water, and on such occasions they permit a boat to approach close to them without showing any fear. The sturgeon is our only Ganoid fish, and it occurs at intervals on every part of the Scottish coast. Of sharks and rays (*Elasmobranchii*) no fewer than 26 species occur, many of them, as the picked dogfish, in incredible numbers. The basking shark—the largest of known fishes—is somewhat common in the Orkney and Shetland Islands, but it is a comparatively harmless species. The Greenland shark, the thresher, and the blue shark also occur. Among the most interesting of recent additions to the Scottish fauna was that made by the capture off Wick in 1884 of a specimen of the Torpedo Ray (*Torpedo nobiliana*). Of the other rays the commonest species in Scottish waters are the skate and thornback, both used as food. There is no special fishery for these, but they are caught in large numbers by trawlers on the east coast, and sold at a low price. The hag-fish, which bores into and devours the bodies of other fishes, and the sea lamprey, are the Scottish species belonging to the order Cyclostomata; while the lancelet—the lowest of all vertebrate animals—represents the *Leptocardii*.

MOLLUSCA.—Passing from the vertebrate or back-boned animals, the invertebrate division of the animal kingdom remains to be dealt with. This includes a vast assemblage of species, but unfortunately only a few of its subdivisions have been thoroughly worked out by naturalists. One of these is the *Mollusca*, regarding the British species of which fairly complete histories have been furnished by Forbes and Hanley, and more recently by Gwyn Jeffreys. According to the latter the total number of species of undoubted British mollusca is 686. These consist of 124 land and fresh-water shells, of which 15 are bivalves (*Lamellibranchiata*) and 109 univalves (*Gastropoda*); and 562 marine species. The latter are thus classified: Brachiopoda, 6; Lamellibranchiata, 171; Gastropoda, 366; Pteropoda, 2; and Cephalopoda, 12. Of the marine species no fewer than 72 have not as yet been found beyond the British isles and seas. The shells of several species are occasionally dredged in British waters, and included in lists of British shells which have never been found living in our area, although they still exist in high northern latitudes. A marked feature in the molluscan fauna of Britain is its antiquity; thus, of the 124 land and fresh-water shells at present existing in Britain, no fewer than 80 species were living in Tertiary times. Although there are many species exceedingly local in their distribution, yet the great majority of British shells occur in Scotland. The land molluscs belong for the most part to the family *Helicidae* or snails. They are found chiefly in connection with the vegetation upon which they feed, but certain species affect particular situations; thus *Helix aculeata* is usually found among dead leaves and moss in woods. The commonest Scottish species is *Helix nemoralis*, remarkable for the endless variety of colour and pattern in its shell. *Helix pomatia*—the snail most commonly eaten on the Con-

tinent—does not occur in Scotland. Some species, as *Achatina acicula*, are subterranean; others, as the slugs, have no external shell. They can all be found most readily during moist weather. Of fresh-water bivalves, the most important Scottish species is the pearl mussel. It is found in most of the mountain streams, but the Scottish pearl fishery has been chiefly prosecuted in the rivers Forth, Tay, Earn, and Doon. The largest of Scottish fresh-water shells is the *Anodonta cygnea*, found in lakes, canals, and slow-flowing rivers. It attains a length of 3 inches with a breadth of 5·5 inches. Another curious form is *Dreissena polymorpha*, somewhat resembling the common mussel, which in Scotland seems to be confined to the canal at Edinburgh. It was first observed in Britain in 1824, and is believed by some naturalists to have been originally a marine form, as it occurs fossil in marine strata.

The sea bed has been divided by naturalists into four zones, each characterised more or less distinctly by its molluscan fauna. The Littoral zone lies between the tide marks, and is usually clothed with an abundant crop of seaweed. The molluscs of this zone are familiar to every walker by the seashore, as they are uncovered at intervals by the receding tide. They comprise the periwinkles, dog whelks, limpets, and chitons; and several of them are eaten in Scotland and largely used for bait. Where the Littoral zone is sandy, and consequently bare of vegetation, a different set of molluscs are found, as cockles, mussels, razor shells, myas, etc. These are for the most part boring molluscs that bury themselves in the sand, and they are also eaten and largely used as bait. Other borers found in this zone are the different species of *Pholas*, which drill their way into sandstone, limestone, and shale; and the *Teredines*, or ship worms, which bore their way into wood. The Laminarian zone extends from low-water mark to a depth of 10 fathoms, and its seaweed nourishes a large number of phytophagous molluscs, including species of *Patella*, *Trochus*, and *Rissoa*. It is the zone also of the sea-slugs (*Nudibranchiata*). The Coralline zone has a vertical range extending from 10 to 50 fathoms. Marine vegetation is scarce in this area, and consequently the molluscs are for the most part animal feeders. They include whelks, spindle shells, and oysters on stony ground, and many species of *Cardium*, *Cyprina*, etc., on sandy or muddy bottoms. Beyond the Coralline lies the Deep Sea zone, which includes all depths beyond 50 fathoms. So far as British seas are concerned, this zone is rich in molluscan life. This is especially the case on the great fishing 'banks,' to which fish are said to be largely attracted by the abundance of molluscan food.

Of the six species of British Brachiopoda—those curious shells which are found so abundantly as fossils in the older formations—4 are found in Scottish waters. *Terebratulina caput-serpentis*, the commonest form with us, is not found in English waters. It occurs on the west coast of Scotland throughout all the zones of vertical depth. Of the highest group of molluscs—the Cephalopoda—Scotland possesses 7 out of the 12 recorded species. These include the common squid, the cuttle-fish or sepia, and the octopus. Many years ago one of the so-called giant cuttlefishes was found stranded in the Shetlands. It measured altogether 23 feet in length, the body alone measuring 7 feet.

INSECTA.—The class of insects includes a larger assemblage of species than any other similar division of the animal kingdom. They most abound in tropical regions, but are also largely represented in temperate countries. The insects of the British Islands differ but little from those of the Continent, and so many of the species that were at one time supposed to be peculiar to our island have since been discovered on the Continent,

that 'our best entomologists,' says Mr A. R. Wallace, 'have come to take it for granted that all our supposed British species are really natives of the Continent, and will one day be found there.' That all our species have had a continental origin is extremely probable, but having regard to the different climatic and other conditions that prevail in Britain, now that it is an island, it is possible that British species, which at one time were also continental, have now become peculiar to Britain through their extinction elsewhere. Of late years the entomology of Scotland has been studied with considerable zeal; much, however, remains to be done before all the Orders of insects found in Scotland have been exhaustively worked out. The Orders that have received most attention are the *Lepidoptera*, or the butterflies and moths; and the *Coleoptera* or beetles. Of *Lepidoptera* there are about 2000 British species, 66 of which are butterflies and the rest moths. Of the butterflies 38 occur in Scotland. The most common forms are the cabbage butterflies (*Pieris*); the largest and most gaudy are the red admiral and the small tortoiseshell. Now that the large copper (*Polyommatus dispar*), once common in the fens of England, is extinct, Scotland possesses the only British butterfly sufficiently distinct from the continental form to constitute an undoubted variety. This is *Lycena astrarche* var. *artaxerxes*, a species which long had its headquarters on the slopes of Arthur Seat. The best localities there were, however, destroyed by the construction of the carriage road between Edinburgh and Duddingston. There are a few localities still known for it in the neighbourhood of Edinburgh, and, according to Stainton, it is to be found on the slopes of several Scottish hills. *Erebia* is a peculiarly northern genus, its species occurring in the mountainous districts of Scotland and the north of England. Of the 2000 British moths nine are said to be peculiar to Scotland. The Shetland Islands have a peculiar variety of the ghost moth, in which the usual white is replaced by yellow and buff. The largest of Scottish moths is the death's-head, not common anywhere, but found occasionally in considerable numbers in the larval state on the leaves of the potato. Most of the moths are nocturnal, and these as a rule are of a dingy colour; but there are many day-flying and crepuscular species, as the burnet and hawk moths, that rival the butterflies in the brightness of their colouring. Many of the Scottish *Lepidoptera* are classed among the foes of the farmer, the gardener, and the forester. These include such forms as the cabbage butterfly, the turnip moth, the goat moth, and the codling moth. The *Coleoptera* or beetles are a still more numerous order of insects, the British Islands alone possessing nearly 4000 species; 72 of these have not as yet been found outside the British area, but many of these, there is little doubt, will yet be recognised on the Continent. Of those which, in the opinion of so competent an authority as the late Mr Rye, are likely to be peculiar to the localities in which they occur, seven belong exclusively to Scotland. One of these—*Apion Ryei*—has as yet only been found in the Shetland Islands; another—*Anthicus Scotticus*—is from Loch Leven; while a third—*Agathidium rhinoceros*—is, so far as known, confined to old fir woods in Perthshire. The other three are *Oxygoda Edinensis*, *Anistoma clavicornis*, and *Telephorus Darwinianus*—the last a sea-coast species described as a stunted form of abnormal habits. The *Coleoptera* of Scotland have been collected and studied by such well-known entomologists as Duncan, Wilson, Murray, and Sharp. So long ago as 1834 the *Coleoptera Edinensis* of Duncan and Wilson was published, in which fully 700 species of beetles from the neighbourhood of Edinburgh were described. A greatly extended list appeared in Mr Andrew Mur-

ray's *Coleoptera of Scotland*, published some time after. The fullest list, however, is that which has appeared in the *Scottish Naturalist*, by Dr Sharp. The other Orders of insects have not received the attention bestowed upon the two already noticed; certain families, however, belonging to these Orders have been worked with comparative fullness by specialists. Among these may be mentioned the researches of Mr Cameron and Professor Traill on gall flies (*Cynipidae*), Buckton's *Monograph of British Aphides*, and Lubbock's *Collembola and Thysanura*.

CRUSTACEA.—The seas and estuaries around the Scottish coast abound in a great variety of crustaceans. There is hardly a rock between tide marks that is not encrusted with the common barnacle, and every bit of sandy shore is alive with sandhoppers. The Littoral zone everywhere abounds in shore crabs, shrimps, and sea-slaters, while at greater depths occur the edible crab, the lobster, and many others. In addition to the larger forms, Scottish waters abound in *Entomostraca* and *Copepoda*, which make up for their almost microscopic minuteness by the vastness of their numbers. So numerous, indeed, are they as sometimes to colour the sea over considerable tracts. The Crustacea are pre-eminently the scavengers of the sea, devouring indiscriminately both dead and living prey, while many are parasitic on fishes. In turn they are preyed upon, chiefly by fishes, in whose bill of fare they form a most important item. The mackerel, the herring, and other shoal fish are often found gorged with minute crustaceans, and what is known as 'herring food' is an immense aggregation of minute copepods, which sometimes forms a scum on the sea for miles. The larger species, as crabs, shrimps, and Norway lobsters, are a favourite food of the cod and other members of the family *Gadidae*. Several members of this class are also used as food by man, and Scotland possesses considerable crab and lobster fisheries. Of the latter the most important are on the west coast and adjacent islands. There the lobsters are collected in perforated wooden boxes, which are kept floating in the sea at the various points where steamers call at intervals to convey such marine produce to the English markets. The common shrimp is found abundantly on sandy bottoms around the coast, but it is in less request as an article of food in Scotland than it is in England. Hermit crabs are common everywhere on the coast. They are alone among Crustacea in their habit of dwelling within the dead shells of molluscs. Land and fresh-water crustaceans are common in Scotland, small ostracods being abundant in stagnant water, and 'slaters' (*Porcellio*) common everywhere under stones and decaying wood. Lists of the Crustacea of particular areas of Scottish seas have been published; thus the student will find a list of the Crustacea of the Firth of Forth in Leslie and Herdman's *Invertebrate Fauna of the Firth of Forth* (1881). The completest catalogue of Scottish Crustacea, however, is probably that contained in an appendix to Smiles' *Life of a Scottish Naturalist*, in which no less than 295 species are given as found by Edward in the Moray Firth.

ECHINODERMATA.—Starfishes, sea-urchins, and sea-cumbers are tolerably common in the seas around Scotland, 77 of the 84 species given by Edward Forbes being Scottish. The most abundant starfish on our coast is the common Crossfish (*Asterias rubens*), usually with 5 rays, and common at low water, although it occurs at all depths up to 30 fathoms. Another common form is the Brittle Star (*Ophiothrix rosula*), which owes its trivial name to the facility with which it throws off its arms when touched. One of the most remarkable of Scottish species is the Feather Star (*Antedon rosacea*). It has been recorded at Peter-

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head, but nowhere else on the east coast, whereas it is tolerably common on the west, especially in Lamlash Bay. This starfish is of special interest from the fact that at an early stage of its growth it is fixed on a long jointed stalk, and is thus a connecting link between the starfishes proper and the crinoids, which are chiefly now a fossil group. One of the handsomest of Scottish species is the Sunstar (*Solaster papposa*), of a red or purple colour above, and having from 12 to 15 rays. One of the rarest and most striking forms is the Cushion Star (*Hippasteria plana*). No one who has scanned the bottom of the sea, at a depth of 2 or 3 fathoms, on the west coast of Scotland, can have failed to observe the numerous sea-urchins that lie dotted here and there over its surface. Of these there are comparatively few Scottish species, the most common being the Egg Urchin (*Echinus sphaera*). Seven species are noted by Leslie and Herdman as occurring in the Firth of Forth. The Sea-Cucumbers (*Holothuria*) have not the elegant or symmetrical forms of the starfishes or sea-urchins, nor do they occur in our waters in such abundance. One of the largest known species—the Great Sea-Cucumber—was first taken in British waters off the Shetland coast, where it is tolerably common, the Shetlanders naming it ‘sea-pudding.’

CeLENTERATA.—This division of the animal kingdom includes the so-called zoophytes, jelly-fishes, sea-anemones, and corals. The hydroid zoophytes are plant-like structures, often mistaken for sea-weeds, but which in reality are immense aggregations of minute polyps connected together by the chitinous substance which forms the stalks and branches. Nowhere in Britain have these zoophytes been more fully investigated than in the basin of the Firth of Forth, and its species include most of those known to occur in Scottish waters. In Leslie and Herdman's list no fewer than 85 Firth of Forth species are recorded. Jelly-fishes are common on the Scottish coast, and often after storms they cover large tracts of the sea-shore. In calm summer weather, especially on the west coast, they may often be seen in thousands, displaying their shapely forms and most delicate colours, and moving gracefully about by the alternate expansion and contraction of their swimming bells. The species of these delicate organisms are not yet fully worked out. Sea-anemones are a well-known group that occur in abundance on all the rocky parts of the British coast. They are most numerous, both in species and individually, on the south coast of England, but of the 75 British species described by Gosse in his *History*

of *British Sea-Anemones* more than a half occur in the Scottish area. The most abundant species is the Beadlet (*Actinia mesembryanthemum*), readily distinguished by its red or liver-brown colour, and its marginal ring of azure blue dots. It can be readily kept in confinement, and a specimen removed from the Firth of Forth by Sir John Dalyell in 1828 is still alive. This unique specimen is well-known to naturalists as ‘Granny.’ Another common and much more showy species is the Dahlia wartlet (*Tealia crassicornis*). Although much larger than the beadlet, it is more liable to be overlooked, as it generally contrives to conceal itself under a coating of gravel and broken shells. Another common Scottish species is the cave anemone (*Sagartia troglodytes*), which usually inhabits the crevices of rocks. The mottled grey colour of its disk gives it a general resemblance to the rock on which it is fixed, and so helps to conceal it. The finest of the British species—the Plumose anemone (*Actinoloba dianthus*)—occurs on both the east and west coasts of Scotland. It is sometimes found between tide marks, but more usually at the depth of a few fathoms. The student will find ample information regarding all the Scottish species in Gosse's work already referred to. Corals are usually associated with tropical regions, but there is one group of British *Actinia*, in which a coralline structure is developed. These are the Cup-Corals (*Caryophyllia*), the tissues of which secrete calcareous matter. They occur sparingly in the Shetland Islands, Moray Firth, and Oban Bay. Allied to the Anemones are the Alcyonarians and Pennatulids, several species of which occur in Scottish waters. The most remarkable of these is *Funiculina quadrangularis*, which, after having been dredged upon the Norwegian coast by Professor Malm, was afterwards obtained in the Bay of Oban. It attains a length of about 5 feet. A considerable number of species of sponges belonging to the *Calcarea* and *Fibrosa* are found off the Scottish coast. Some of these form incrustations on stones about low-water mark; others, found in deeper water, give off branches, and have thus a shrub-like appearance. Twelve species of sponges have been noted from the Firth of Forth. There are other groups of Marine Invertebrata, such as Polyzoa, Tunicata, Vermes, and Foraminifera, which there is not space to notice further, but the reader will find lists of Scottish species belonging to these and other groups in Dr McIntosh's *Marine Fauna of St Andrews*, Leslie and Herdman's work already referred to, the *Scottish Naturalist*, and the *Proceedings of the Royal Physical Society*.

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By JAMES LANDELLS, late Sub-Editor of the *North British Agriculturist*.

THE agriculture of Scotland is closely bound up with the prosperity of the country. Here, as in other parts of the United Kingdom, it forms the staple industry, absorbs the greatest amount of capital, and makes the largest demands on the energy, skill, and perseverance of its workers; while it is dependent more than any other trade on the character of the seasons and other fluctuating circumstances beyond human control. As showing the relative importance of agriculture to the other great industries of the country, Professor Leone Levi, calculating the 47,000,000 acres of land under cultivation in the United Kingdom at an average of £5 10s. per acre, brings out the astonishing total of £258,000,000 of capital invested in agriculture, as com-

pared with £80,000,000 for the cotton manufacture, £40,000,000 for the woollen, £30,000,000 for the iron industry, and £70,000,000 for the mercantile marine. Yet agriculture has been left almost entirely to its own resources, and its present high condition, compared with what it was a century ago, is due more to the intelligence, skill, energy, and enterprise of farmers themselves than to the fostering care of the Legislature. At no previous time has the British agriculturist been so well equipped as at present with all the necessary appliances for the saving of labour, the efficient and economical cultivation of his land, and for the handling and utilising of his produce. But the farmer is undoubtedly heavily handicapped in his business, and what

with high rents, antiquated and absurd restrictions in regard to the cropping of his land and the disposal of his produce, inequitable land laws, high and unequal railway tariffs, and bad seasons, he has had for the last twenty years a hard fight to hold his own with the foreign competitor. In many respects Scotland is less favourably situated than the southern part of the kingdom. A large proportion of the arable land in Scotland is as fertile as any part of England, and some of the best lands in the Lothians and elsewhere are not surpassed in point of fertility and productiveness by any agricultural land in the world. But in the south of England, where the crops ripen at an earlier period of the season, a good deal can be done in the way of 'catch-cropping'—that is, growing subsidiary crops of trifolium, vetches, turnips, cabbages, etc., after the main crop has been harvested, and very little of this catch-cropping can be done in Scotland, except in the very earliest districts, on land where a crop of early potatoes has been gathered in June or the first part of July, and a second crop of Italian rye-grass, rape, or other feeding stuff may be grown on the same land the same season. In Scotland, also, the climate is as a rule less favourable than it is in many parts of England, and in several districts the heavy rainfall reduces very materially the productiveness of the soil, not only by the washing away of nitrates, which are the most valuable essential of plant food, but also by preventing the crops from developing properly. On the seaboard of the Moray Firth the average rainfall varies from 23 to 26 inches, and in Mid and East Lothian the rainfall averages 26 inches. But in Kinross-shire and part of Fife the average rainfall ranges from 40 to 60 inches, while in the central parts of Ross-shire, Inverness-shire, and the north of Argyll, in the hilly parts of Galloway, and the counties of Dumfries, Lanark, Peebles, Selkirk, and Roxburgh, the rainfall ranges from 60 up to 80 inches. The several disadvantages resulting from such a heavy rainfall, alike as regards the wasting of nitrates, the spoiling of the crops, and retarding the progress of the live stock grazed on these lands, are at once apparent. Scottish farmers, however, though pursuing their occupation under greater difficulties, have distinguished themselves more than those of any other country in the successful cultivation of the land; and to their native shrewdness, clear judgment, and resolute determination may be traced the great progress that has been made by agriculture in Scotland during the last hundred years.

Prior to the Union the agriculture of Scotland was hardly worthy of the name, as compared with the enlightened and skilful modes of cultivation now practised. Farms were small in size; pastures were poor, no artificial grasses being sown; there was little encouragement for the rearing of stock, owing to the low prices realised; the greater part of the country was unenclosed; plantations were almost unknown; roads and bridges had not come into existence, and the means of conveyance were of the most primitive character; artificial drainage had not been introduced; and tillage was restricted to the naturally dry land, the low-lying portions being for the most part bogs and marshes, which had an injurious effect alike on the people and their stock. In the second half of the 18th century agriculture began to advance; stock-breeding received more attention; and a large cattle trade was done with England, to which the young Scottish animals were driven to be fattened on the richer pastures of the south, and there was in consequence a great increase in prices. The land, which had been split up into small farms, cultivated by the occupiers without the aid of hired labour, began to be consolidated, and was let on lease in larger holdings to the tenants who possessed most capital. The ruinous practice of exhausting the

soil by taking successive crops of corn was abandoned; green crops alternated with grain, and the improved system of husbandry soon became manifest in the character of the land. A great revolution was, however, effected by the introduction of turnip husbandry, which, followed by the use of artificial manures and the application of steam power both by land and water, thus opening up fresh outlets for stock, gave a new phase to Scottish farming. It was about 1764 that Mr Dawson of Frogden, a young Berwickshire farmer, hired himself for a few months to the celebrated Mr Bakewell of Dishley, Leicestershire, and having mastered the details of turnip culture, returned and put them into practice on his own farm. Thus was introduced to Scotland the most valuable root grown on the farm, and one which has ever since had a powerful influence on the agriculture of the country, about 480,000 acres being now grown annually.

Shortly before the close of the 18th century the farms were enclosed by fences and divided into fields of convenient size for carrying on a regular rotation of cropping; good roads began to be formed; the land was improved by the application of lime; the swing-plough took the place of the old-fashioned Scottish implement drawn by oxen; the thrashing-mill was brought in to supplant the flail, though it was some years later before it was in general use; new field crops, notably the Swedish turnip, were being introduced, together with improved breeds of stock from England; and Scottish agriculture was progressing steadily and satisfactorily when a great impetus was given to it by the outbreak of the wars of the French Revolution. In 1795, with a deficient harvest and the stoppage of foreign supplies of grain, the price of wheat, which for the twenty preceding years had been under 50s. per quarter, rose to 81s. 6d., and in 1796 to 96s. With the high prices then given for farm produce, farms were improved and large tracts of waste land reclaimed. A sufficient indication of the great strides that had been made during the twenty years of the Continental wars lies in the fact that the agricultural rental of Scotland had been nearly trebled, having increased from £2,000,000 in 1795 to £5,250,000 in 1815. A period of disaster and depression followed the termination of the war. Wheat, which in 1812 brought 126s. 6d. per quarter, fell to 109s. 9d. in 1813, and to 74s. 4d. in 1814, when farmers were somewhat startled, but they were thrown into quite a panic when it declined to 44s. 7d. in 1822. It can be easily imagined what would have been their state of mind if they could have looked forward, sixty-two years afterwards, to getting only 26s. per quarter, without Protective Corn Laws, and with immense importations of grain from abroad, greatly increased rents, and the cost of labour doubled. At the end of the first quarter of the 19th century a revival of trade set in, and with good crops and enhanced prices agriculture began once more to look up. Ground bones were first introduced as a manure to Scotland in 1825, and the great stimulus thus given to turnip growing had the effect of bringing many acres of poor, neglected land under cultivation. Steam was being more largely applied to the operations of husbandry; thorough draining and deep ploughing completely transformed the face of the land; a network of railways was spreading over the country and affording easy facilities for the conveyance of manures, feeding stuffs, and farm produce; science came to the aid of the farmer, and instructed him in the ingredients necessary for plant growth; and the agricultural engineer provided him with machinery in every branch of his industry, which expedited his work and placed him in a greater measure independent of the weather in securing his crops. All these contributed to advance the value of land and greatly increase rents. In 1854 and the two

following years prices of grain were greatly inflated on account of the Crimean War having cut off our supplies from Southern Russia, and wheat growers then reaped a rich harvest. The high prices ruling for grain induced competitors for farms to offer correspondingly increased rents, and leases were entered into on terms which brought ruin to many when prices returned to a normal level. A scientific education is now forming part of the training of most young farmers in Scotland, and a knowledge of chemistry is being more generally recognised as essential to good farming. The farmer depends no longer on farmyard manure alone, but has recourse to the various artificial fertilisers now manufactured in such large quantities throughout the country; and chemistry will teach him the value and enable him to understand the application of nitrogen, phosphates, and potash in the growth of cereals, roots, and grasses. Nitrate of soda, introduced to this country as a manure fifty years ago, is now very extensively used, and is recognised as one of the cheapest and most effective fertilisers that can be sown. At the meeting of the British Association at Cambridge in 1845, attention was drawn to the fact that the phosphatic rocks which exist to a great extent in England might be made to furnish a useful and cheap supply of phosphoric acid. A trade in mineral superphosphates was begun, and in recent years it has developed to great dimensions. A new mine of phosphatic wealth has also been tapped in slag phosphate, a bye-product in the manufacture of steel through the dephosphorisation of iron. In many other ways science has rendered great service to the agriculturist. The veterinarian is now-a-days much better equipped for the treatment of the live stock of the farm; the agricultural botanist has supplied much valuable information as to the best grasses and grass mixtures to sow on different soils; analytical associations assist in securing purity of seeds and manures; and the entomologist has shown farmers how they may best protect their crops against the ravages of injurious insects. The value of agricultural science is now, indeed, very fully recognised in every department of farming, and the County Councils recently established in Scotland are doing good work in advancing agricultural education in all its aspects.

It is not always, however, the scientific or practical man that takes to farming, and the depression which at present prevails in agriculture is due in some degree to the embarking in farming of many whose only experience was gained behind the counter, or in some trade but remotely connected with agriculture. In the prosperous times of about 1873, when there were good seasons and bountiful harvests, there was a great inclination to possess farms. It seemed as if a new El Dorado had been found; and the reckless competition which then took place forced rents up to an unnaturally high level, and gave a fictitious value to the land. Such an unhealthy inflation of rents was opposed to all the laws of economical science, and the inevitable reaction came sooner, perhaps, than was expected, and with a severity that was keenly felt throughout the length and breadth of the land. It brought many farmers to ruin, but it had one good effect, in that it secured a reform of the Land Laws and an interference with contracts, which would have been looked upon as revolutionary twenty or thirty years ago. Between 1852 and 1879 rents had increased 50 per cent., and the farmers' labour bill had gone up in a corresponding degree.

Since then there has been long-continued agricultural depression, caused by an enormous increase in the importations of foreign produce at a time when rents had been immensely inflated during the period of prosperity which followed the Franco-German War,

when both France and Germany were for the time being placed *hors de combat* as competitors with Great Britain. Many landlords recognised the imperative necessity of giving their tenants abatements of the rents fixed when prices for agricultural produce were much higher than they are now. On most Scottish estates abatements varying from 10 to 50 per cent. were granted, and over the large number of farms thrown into the market ten years ago there was a great reduction of rental. The leases which had been entered into in those times of inflated prices have now for the most part expired, and within the last twelve months, despite the low rates still prevailing for agricultural produce, there has been, on the whole, a sharp recovery in the demand for land. The great complaint among farmers now is that on account of the extreme competition for vacant holdings they are compelled to offer higher rents than they can well afford to pay. As farm life has many attractions peculiarly its own, this keen competition for good farms is hardly to be wondered at. There is at the present time practically not a single good farm in Scotland for which the proprietor could not find plenty of tenants if it were placed in the market. This is a remarkable contrast to the state of matters now prevailing in many parts of England, where whole tracts of land have gone out of cultivation and farmers are discovering that their business is a very unprofitable one. But even in those English counties where the depression has been most severely felt, the Scottish tenants who have settled there have been doing very well, and the number of Scottish farmers in England has been steadily increasing every year. There can be no manner of doubt whatever that this result is mainly, if not entirely, due to the superior skill and enterprise of the Scottish tenants.

After 1873 there were five successive bad seasons in Scotland. That of 1879 was one of peculiar hardship for the farmer, the almost continuous rains all through the summer keeping the cereal crops from ripening, and injuring both potatoes and turnips. The losses during that disastrous season were reckoned in some districts as about equivalent to two rents. In addition to this rents were high, there was great commercial and manufacturing prostration, and the imports of agricultural produce were unprecedentedly large. Some idea of the great losses sustained during the depression of a dozen years ago, may be gathered from an estimate made in 1881 by a prominent East Lothian farmer. There had been seven bad seasons between 1872 and 1881, five of which were of the very worst description. In 1872 he placed the loss to the farmers of Haddingtonshire at 100 per cent. on the rental, the whole of the rents of that year being paid out of capital; in 1873 he put the loss at 50 per cent.; in 1877 at 100 per cent.; in 1878 at 40 per cent.; in 1879 at 100 per cent.; in 1880 at 30 per cent.; and in 1881 the whole rent was again lost. So that in those nine years a farmer paying £1000 of rent had lost £4300. During the same period it was stated that five farmers, within a radius of 20 miles from Edinburgh, had lost £41,000. Prices for farm produce, particularly cereals, have greatly decreased during the last dozen years. For the ten years from 1871 to 1880 the average prices per bushel were:—Wheat, 6s. 4½d.; oats, 3s. 1½d.; and barley, 4s. 8½d.: total, 14s. 3d. The average price in December, 1894, was:—Wheat, 3s.; oats, 2s. 5d.; barley, 3s. 0½d.: total, 8s. 5½d.; or a decreased return per bushel of 6s. 9½d. In the period that elapsed between the abolition of the Corn Laws and 1880, the agricultural rental of Scotland had increased 49·5 per cent., amounting in 1880 to £7,776,910; but there is now a considerable reduction on that figure. Affairs had become so desperate in 1879 that the Beaconsfield

Government appointed a Royal Commission of Inquiry into the prevailing agricultural distress. After sitting for three years, the Commission, over which the Duke of Richmond and Gordon presided, gave in its report in 1882. They found that the two most prominent causes which were assigned for the distress were bad seasons and foreign competition, aggravated by the increased cost of production and heavy losses of live stock from disease. They recommended an amicable readjustment of rent; compulsory compensation for improvements where these had increased the letting value of the holding; the abolition of the Act of Sederunt, under which hypothec still existed in Scotland; and that local taxes should be borne in equal proportions by landlord and tenant, the support of indoor poor, however, falling on the Imperial Exchequer. On the relations between the different classes interested in agriculture the Commissioners observed that 'no interference between classes, between owners and occupiers, or between employers and labourers, can render any one of them independent of the other. We cannot recall a period in our history in which the relations of these classes have been more severely tried than during the existing depression. Owners have as a rule borne their share of a common calamity, and they, as well as occupiers, have done much to avert the distress from the class who are least able to bear it. It is satisfactory that upon the labourer it has fallen more lightly than upon either owner or occupier. The best hope for the prosperity of agriculture lies in the mutual confidence and friendly relations of the three classes directly engaged in it, and in the common conviction that their interests are inseparable.' The Agricultural Holdings Act was the outcome of the Royal Commissioners' report. In securing it Mr John Clay, Kerchesters, Kelso, a Scottish Royal Commissioner, and Mr James Hope, East Barns, Dunbar, a Scottish Sub-Commissioner, were largely instrumental, both having advocated in the most strenuous manner that the farmer should be fully compensated for the improvements which he executed on his holding. It was a well-intentioned measure, but ten years' experience has proved that it is so very defective as to be altogether inadequate to serve the purpose for which it was intended.

Since the very bad season of 1879 things have altered considerably. Through the falling out of the old leases rents were readjusted, and farmers had pretty well adapted themselves to the new condition of affairs. Another wretchedly bad season was, however, experienced in 1892, when over all the later districts of Scotland the cereal crop was almost destroyed, the turnip crop was a complete failure, and in consequence of the want of fodder and of winter keep stockowners had to rush their animals into the market in an immature state, the result being a collapse in prices. Following that bad season came a great drought in the south of England, where practically no rain had fallen from the beginning of March till the middle of July, and the most serious losses were sustained by agriculturists in the southern counties. This long spell of dry weather was not so severely felt in Scotland, and in fact the Scottish farmers profited from it by getting a higher price for their hay, which was required to supply the deficiency in the south. The extreme distress prevailing in the south of England induced Mr Gladstone's Government to appoint another Royal Commission on Agriculture, presided over by Mr Shaw-Lefevre, M.P., and its inquiry has not yet been concluded. The evidence laid before this Commission by the leading agriculturists goes to show that the great mass of farmers in the country are agreed as to the necessity for further legislation in

order to place the agriculture of Scotland on a right and proper basis. The first and most important reform demanded is the radical amendment of the Agricultural Holdings Act, so as to secure to the tenant full compensation for any and every improvement which adds to the letting value of his farm. Under the existing Act a large number of the more important improvements cannot be claimed for unless the proprietor has given a written agreement that he will pay compensation for them at the end of the lease. These improvements include the erection of buildings, the making of roads, the laying down of land to pasture, etc., and for dealing with these the present Act is practically worthless. It is also demanded that compensation should be given for the consumption on the holding of home-grown produce. At present the tenant can claim compensation for the consumption of purchased feeding stuffs, but not for food grown on the farm, and it is strongly felt that he should receive compensation for the consumption of his own hay, grain, potatoes, and other produce which he is at liberty to sell, seeing that by simply purchasing similar produce from his nearest neighbour he would be entitled to compensation. A third reform desired is that an independent official valuator should be appointed to assess the value of such improvements. The present system of having an arbiter appointed on each side, with an oversman, or otherwise petitioning the sheriff to appoint a single arbiter, has proved very unsatisfactory, and it is considered that with an independent official valuator the tenant would be assured of just and reasonable compensation for his improvements. Since the great change brought about by the development of foreign competition, leases for nineteen years have become less common, and shorter leases, or leases for nineteen years with a break at the end of every five years—which practically means a five years' lease—are now the most popular. The evidence led this year (1894) before the Sub-commissioners for Scotland—Mr James Hope, East Barns, Dunbar, and Mr John Speir, Newton, Glasgow—has gone to show that in the vast majority of cases the high rents which farmers complain of are due to the fact that practical and improving tenants are forced to compete against 'adventurers,' who expect to be able to pay the advanced rents which they offer for a short term of years by exhausting the improvements of their predecessors. Farmers also ask that they should have a free hand in regard to the cropping of their land and the disposal of their produce. This, taken in conjunction with the amendment of the Agricultural Holdings Act, would go a long way to put the letting of land on a sound footing, because if the tenant was secured in his claim for all his expenditure in improving his holding, and had freedom of cropping and free sale of produce, the landlord would require to be very careful in the selection of his tenants, and 'adventurers' of the class referred to would have little chance of being preferred to good practical men. The carrying out of these reforms would in all likelihood have a most important bearing on the prosperity of the country, which might be made to produce a great deal more than it at present does; and if farmers received the fullest encouragement to develop the resources of their holdings, much British gold now sent abroad to aid foreign countries in competing with us would be invested at home. An amendment of the Ground Game Act is also sought. At present there is a close time for rabbits on enclosed grounds, extending through the whole summer and autumn months, and farmers complain that the rabbits bred on these lands feed on their crops during the close time, and are shot down by the gamekeepers for the proprietors. A matter on which both landlords

and tenants are cordially united is in regard to the readjustment of local taxation, so that it should be placed on a more equitable basis, and instead of being levied on rental, should be charged upon 'means and substance,' or in other words upon income. The abolition of the Laws of Entail and Primogeniture is necessary to free the land from the fetters which have bound it for two centuries, and although numerous estates have been disentailed of late years, the removal of this obnoxious statute and the substitution of a simple, economical, and expeditious mode of land transfer would tend to the subdivision of large estates, with manifest advantage to the proprietors and to the nation. It is also urged that State loans, at a low rate of interest, should be granted to proprietors for the purpose of carrying out improvements, the high rates charged by private companies being almost prohibitive. The advantages offered by the railway companies for the conveyance of foreign produce, as compared with the rates charged for home-grown food, have long been regarded as a grievance by agriculturists, and one which they loudly ask to have remedied. Stockowners are putting forward a claim to have tuberculosis scheduled in the same category as foot-and-mouth disease and swine fever, as contagious diseases for which compensation should be paid on compulsory slaughter, and there are sound reasons why this step should be taken.

An important factor in the agricultural problem is the extraordinary development which has taken place in the foreign meat trade. Ten years ago this import trade had practically no existence, but now it has reached gigantic proportions, and the original prejudice against the meat having been broken down, it is consumed in large quantities in all the populous centres of the country. This has had a very material effect on the demand for home-fed stock, and its future bearing on the prosperity of the British stock-feeder is calculated to create much anxiety. Every year the imports of frozen meat are becoming more formidable, and it is not only the American beef trade, but the vast shipments of foreign mutton from Australia and New Zealand that are causing so much apprehension. These will be immensely augmented by the imports that may be expected in the near future from Argentina, whose extensive plains are capable of maintaining practically unlimited flocks. At the beginning of 1894 no fewer than sixty-seven vessels had been fitted with refrigerating machinery for the foreign meat trade, and of these only four were sailing ships; and as an indication of the extent of the trade, it may be mentioned that freezing establishments had been erected in New Zealand and New South Wales capable of handling an annual output of 3,000,000 carcasses of sheep.

It has not always been recognised in this country that the labourer is worthy of his hire, and although a good deal has been done in recent years to improve his position and provide him with better house accommodation, much more might be accomplished in this respect, for it is a deplorable fact that a fourth of the people of Scotland live in houses of one room. The favourable opportunities which offer for farming in the West have been largely embraced by the best class of Scottish agricultural servants, both male and female, and as a result workers became scarce, and the farmer found a difficulty in obtaining the requisite number of hands even at the high wages current. Up till 1876 farm labourers' wages had risen about 30 per cent. during a period of fifteen years, and although there has since been some slight reduction the labour bill still forms a heavy item of the farmer's expenditure. The passing of the Franchise Bill in 1884 placed a powerful weapon in the hands of the agricultural labourer, and rendered

him an important factor, and one that must be reckoned with, in all future legislation. Farmers no longer form a majority of the electorate in rural districts, and candidates for parliamentary honours, to be successful, have now to shape their conduct quite as much according to the views of the hind as the master. The abolition of entail and the establishing of short tenancies may lead to a subdivision of the larger holdings, and such a result would not be without its advantages. There is much diversity of opinion as to what should be the size of arable farms, but from 100 to 360 acres will probably be found the most convenient and economical to work. A regular gradation in the size of farms is, however, best adapted for meeting the requirements of all classes. Small crofts, the evils of which are seen in the Highlands, are not desirable on any ground, but holdings that could be worked with a pair of horses are not so numerous as to hold out an encouraging prospect to the labourer that he may himself rise to the position of a farmer and reap the fruits of his own industry without having to go abroad.

The various agricultural societies that exist in every district of the country have done much to foster and improve the agriculture of Scotland, and it is to their influence that the present high character of our live stock is largely due. The Highland and Agricultural Society is the oldest in Scotland, having been established in 1784. Its centenary was celebrated in Edinburgh in 1884 by an exhibition of live stock the like of which, both in point of numbers and quality, had never before been seen in a Scottish showyard. The society holds its annual show in the eight principal centres of the country, visiting in turn Edinburgh, Aberdeen, Dumfries, Melrose, Stirling, Perth, Glasgow, and Inverness. This action on the part of the parent society stimulated farmers in the different districts to greater exertions in stock-breeding, and as a result a large number of local societies have sprung up, under the influence of which great good has been done to agriculture generally. The Highland and Agricultural Society has a membership of 5500, and a reserve capital of about £80,000. During its existence it has been the pioneer of every movement having for its object the welfare of the agricultural interests, and the record of the society is the history of the progress that has been made by Scottish agriculture. For the first time in the history of the Society, Royalty was present in its showyard at Aberdeen in 1894, when the Duke of York presided over the meeting. His Royal Highness was president of the Society the previous year, and had intended being present at the Edinburgh Show of 1893, but his auspicious marriage intervened, and to make up for the disappointment then felt the Duke consented to be nominated for re-election as president, and to attend the Aberdeen Show in person. He was accorded a most loyal and enthusiastic welcome by all classes in the north, and immense crowds gathered in the showyard during the two days on which His Royal Highness was present. The Royal visit was attended with the best results, the show being one of the most successful that had been held, and yielding a handsome financial surplus.

Agricultural Statistics.—The Highland and Agricultural Society of Scotland began in 1853 the collection of statistics relating to the agriculture of the country, and this work they carried on for four years, till in 1857 it was dropped in consequence of a misunderstanding with the Government. In 1866, however, the matter was taken up by the Government themselves, and since then the statistics have been published annually by the Board of Trade. The latest official returns were made on 4th June, 1894, and

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these show that at that date there were in Scotland 4,892,183 acres under crops, bare fallow, and grass; 5322 acres used by market gardeners for growing vegetables and other garden produce; 1383 acres in nursery grounds; and 865,063 acres under woods. In 1857, when the statistics were first collected, the acre-

age under crop was 3,556,572; in 1867 there were 4,379,552 acres; in 1877 there were 4,668,221 acres; and in 1884 there were 4,783,124 acres, so that there has been a steady increase in the acreage of land brought under cultivation. The following table shows the acreage under the principal crops:—

	1857.	1867.	1877.	1884.	1894.
Wheat,	223,152	111,118	81,185	68,716	44,866
Barley or Bere,	219,994	218,486	269,845	230,554	218,057
Oats,	938,613	997,120	1,024,832	1,045,895	1,024,223
Rye,	5,989	7,066	10,087	7,334	7,593
Beans and Pease,	42,873	30,239	26,680	23,441	14,881
Turnips,	476,691	484,800	506,757	484,998	483,253
Potatoes,	139,819	157,529	165,565	163,847	129,359
Mangold,	2,803	844	2,053	1,296	1,050
Cabbage, Kohl-Rabi, and Rape,	3,736	4,150	5,187	5,418	9,681
Vetches, etc.,	18,418	19,864	15,443	18,164	11,459
Clover and Grasses under rotation,	1,459,805	1,211,101	1,404,032	1,526,442	1,577,669
Permanent Pasture,		1,053,285	1,138,056	1,207,019	1,354,477

The total acreage of cereals in 1894 was 1,309,620, as compared with 1,375,940 in 1884; and of green crops, 637,663 acres, as against 674,817 ten years ago. There were, in 1894, 9 acres under flax and 7863

acres of bare fallow, as compared with 55 acres of flax and 27,540 acres of bare fallow in 1884. The total head of live stock in Scotland at the different periods was as follows:—

Year.	Horses.	Cattle.	Sheep.	Pigs.	Total.
1857	185,409	881,053	5,683,163	140,354	6,889,984
1867	...	979,470	6,893,603	188,307	...
1877	188,736	1,102,074	6,968,774	153,257	8,412,841
1884	187,803	1,136,604	6,983,293	159,560	8,467,260
1894	205,707	1,201,506	7,272,864	148,535	8,828,612

Live Stock.—In no department of agriculture has Scotland made greater progress than in that of stock-breeding. Increased attention has within the last twenty years been paid to the improvement of the live stock of the country, and by careful mating of well-bred animals, and with special care in the selection of sires—using only those which possess in a pronounced degree the most valuable qualities of the breed, and therefore most likely to transmit them to their progeny—a remarkable change has been effected in the character of the stock now to be seen on the farms of Scotland, as compared with the stunted, ill-bred animals with which agriculturists were satisfied half a century ago. Much good has been done in this respect by the numerous agricultural societies which exist in every county and almost every district of Scotland, and which, by creating a healthy rivalry among neighbouring tenants, have proved an effective stimulus to high-class stock-breeding. Of the 205,707 horses in Scotland in 1894, 147,290 were used solely for the purposes of agriculture, and these were chiefly animals of the Clydesdale type, which belongs peculiarly to this country. The characteristics of the Clydesdale are well defined, and stamp it as the most serviceable and valuable breed of the equine species that has yet been produced. There is no authoritative record of the origin of the Clydesdale, but there is a pretty general agreement that its now almost perfect development is traceable to the introduction of foreign sires and the crossing of them with native mares. In several important features there is a great similarity between the Clydesdale and the English or ‘Shire’ horse, both of which are said to be descendants of Flemish stallions brought over by King John, and mated with English mares; the produce finding their way to Scotland, and, by a further cross, resulting in the present type of

agricultural horses. The English breed is larger, and possesses more substance than the Clydesdale, but the latter has a decided superiority in bone and muscle, with a compact and firmly-knit body, symmetrical head, and strong feet and pasterns, that render its strength more durable, and admirably fit it for heavy draught work. As the name implies, the home of the breed was originally in the valley of the Clyde, but as agriculture developed a greater demand sprang up for horse-flesh, increased attention was paid to breeding, and as the Lanarkshire breeders produced the best quality, they received the highest prices. As a result the stock was introduced to every district, and became the recognised breed of the country. The west of Scotland no longer possesses a monopoly of high-class Clydesdales, for in recent years many of the most successful animals in the principal showyards have come out of Galloway, and not a few splendid breeding Clydesdales are to be found in the east of Scotland. But it is not only in its native land that the Clydesdale is valued. For several years large numbers left our shores for the United States, Canada, Australia, and other foreign parts. That export trade became a regular business, to which some of the principal horse-breeders devoted considerable attention, and their stock, which, as a rule, comprised the best blood that could be picked up, only changed hands at very handsome prices. This demand from abroad had the effect of greatly enhancing the value of agricultural horses in this country, and prices for well-bred stock were about doubled. Good young serviceable animals for the farm brought from £60 to £80, and second-rate horses realised from £40 to £50; while heavy draught horses, suitable for contractors’ purposes, were not to be had under the ‘three figures.’ With the view of maintaining the excellence of the breed considerable efforts are put

forth by the various agricultural societies, which annually offer premiums ranging from £50 to upwards of £100 at the Glasgow Stallion Show in the spring, to induce owners to travel their stallions in particular districts, so that the farmers may have the benefit of good sires. Within late years, however, the demand for Clydesdales from America has greatly fallen off, and at present (1894) the export trade in high-class stock of this breed is almost stagnant. This has had a prejudicial effect on prices, but at home the popularity of the breed is fully maintained, and the same interest continues to be shown in maintaining its purity.

There are four native breeds of cattle in Scotland—namely, the Ayrshire, the Polled Aberdeen or Angus, the Galloway, and the West Highland. All of them have distinctive characteristics, and each is peculiarly adapted to the district to which it belongs. The Ayrshire has a congenial home in the mild, moist climate of that county; the Polled Angus is well suited to the character of the north-eastern district; the more hardy Galloway thrives admirably on its native pastures in the south-west; and no better breed than the West Highland could be found to harmonise with the rugged grandeur of our rough mountain land. The Ayrshires are the principal dairy cattle in the country, and they are much valued for that purpose. Taking their name from the county of Ayr, where they were first found in anything like their present form, they are believed to be descended from the wild cattle of Scotland, but their development has been so great that it would be impossible to trace in them a resemblance to the unshapely animals that existed in the district a hundred years ago. Within that period the improvement of this breed has been very marked, not only in their general characteristics, but especially in regard to their milking properties; and they have now been brought to a point as near perfection as it seems possible to imagine. With beautiful flecked coat, chiefly brown and white, symmetrical and well-proportioned body, small and sweet head adorned with gracefully curved horns, and carrying a capacious udder that betokens her rich milking qualities, the Ayrshire cow is as neat and pretty a specimen of the bovine race as could be desired, and the breed is continuing to increase in popular favour as a type in every way peculiarly fitted for the requirements of the modern dairy farmer. Being more hardy, she requires less pampering than the little Jersey cow, and she surpasses all other milking breeds in the quantity of milk she yields in proportion to the amount of food consumed. The average yield per cow is from 500 to 550 gallons annually, which is a very remunerative return. The milk is rich in quality, and contains the essential ingredients for good butter and cheese. Though originally confined to Ayrshire—where, with the exception of a few shorthorn crosses bought for fattening purposes, they still form the only breed of cattle—they have now spread to Renfrewshire, Lanarkshire, Stirlingshire, Galloway, and Dumfriesshire; but they are found in largest numbers in the three south-western counties, which form the centre of the dairying district of Scotland. About a score of cows is considered a fair-sized dairy in Ayrshire, but in Galloway the dairies are much larger, and comprise from 50 to 100 cows. Farmers who wish to be relieved of the management of their dairies, let the cows to a bower, who either pays a fixed price in money at so much per cow, or gives a certain quantity of cheese at the end of the year. This system of 'bowing' prevails somewhat extensively in Galloway, the bower taking all the necessary labour connected with the feeding of the cattle and the manufacture of the cheese.

The great beef-producing district of Scotland is in the north-east, where the Polled Aberdeen or Angus

cattle have their home. Originating in Aberdeen and Forfar shires, this breed has spread so widely that it is now predominant in the counties of Aberdeen, Forfar, Banff, Kincardine, and Moray. These five counties contain nearly 330,000 cattle, or about one-fourth of the whole head in Scotland. The cows are fair milkers, but their merit in this respect is not so high as to constitute them a breed specially suited for dairying purposes. It is as beef-producers that they have attained to eminence, and it is largely owing to the high character of the black Polls of the north-east that Scotland is assigned the premier place in the great English meat markets. 'Prime Scots,' as the beef is termed in the market reports, invariably tops the quotations, and the bulk of the consignments proceeds from the district in which the Polled Angus cattle are located. The animals are very pleasing to the eye, have a nice mellow skin, a symmetrical shape, and a carriage of much gaiety, with a splendid constitution fitting them for a varied climate. They take on beef very rapidly, and are brought to maturity earlier than any other Scottish breed. This gives them a considerable advantage, and their favour with the public being more than maintained, farmers are annually becoming more extensive stock-raisers. The shrewd breeders of the north-east have shown great skill in the management of their cattle, and in no other district of the country are there to be found so many fine herds of these beautiful black Polls, brought out in the very best condition. The breed owes much of its development to Mr Hugh Watson, Keillor, since whom the late Mr William M'Combie of Tillyfour—a name that was almost a household word among agriculturists—did perhaps most for its improvement, his achievement at the Paris Exhibition of 1878, when with a group of his native Polls he defeated the exhibits of cattle from all other countries, doing more than anything else to bring the high qualities of the Polled Angus before the agricultural world. Since his death there has been no falling off in the energy with which northern farmers have striven to promote their favourite breed, and at no former period of its history did it stand so high in the estimation of breeders in this country and on the other side of the Atlantic as in 1882 and 1883, when some remarkable prices were paid at public sales. During 1883-84 a very large number of breeding animals were exported to the United States and Canada, where their beef-making qualities commended them; and in consequence of this increased demand and the drain thus made on native stocks, prices went up by 'leaps and bounds,' and animals of good pedigree were only to be had for something like a ransom. The cream of some of the best herds were drafted away to fresh pastures, and it was with a pang of regret that many lovers of the 'blackskins' in their native district saw some of the most valuable animals of the breed picked up by the foreigner, but in these days of depression and want of capital the influence of the dollar easily prevails. At some dispersion sales in the north the prices were of such a fancy character that a few of them are worth recording as an indication of the favour with which the breed was then regarded. In 1882 the splendid herd belonging to the Earl of Airlie was dispersed at Cortachy Castle, when some extraordinary figures were recorded, the sale causing quite a sensation among breeders. The cows averaged 119 guineas; two-year-old heifers, 204 guineas; and yearling heifers, 132 guineas—the highest average ever obtained in the annals of Polled cattle. For a cow of the 'Erica' tribe 500 guineas was paid, and 400 and 300 guineas for two other cows; two-year-old heifers brought 360 and 310 guineas; yearling heifers, 380 and 280 guineas; and even a heifer calf realised 300 guineas. In 1883

there was another sale that will be memorable in Polled circles, when the Bridgend herd, belonging to Mr R. C. Auld—a nephew of the late Mr M'Combie of Tillyfour—was disposed of. Five cows of the 'Pride' tribe averaged no less than £310, 16s. each. Mr Auld bought a Polled cow—one of Mr M'Combie's famous Paris group—at the Tillyfour sale in 1880 for 270 guineas, a price that was looked upon at the time as the height of extravagance. The cow had a heifer calf in each of the three succeeding seasons, and when all four were brought to the hammer in 1883 they realised the handsome total of 1365 guineas. The dam brought 385 guineas; her two-year-old heifer, 220 guineas; the yearling heifer, 510 guineas; and the calf, 250 guineas. Allowing an ample margin for keep, there was a clear profit on the transaction of over £1000, which was a sufficient indication of the extent to which prices for Polled cattle had advanced. Since then there have been none of these inflated prices, but for the best class of stock a very satisfactory return is still received. In 1894 Mr Smith Grant, at his Auchorachan sale, got 290 guineas for a yearling bull; and at the Bradley Hall dispersion sale in Northumberland, Mr Owen C. Wallis' Polled stock realised an average of about £52, a yearling heifer bringing 200 guineas. On several occasions pure-bred Polled Angus cattle have carried off the champion prizes at the great English fat stock shows, Mr Clement Stephenson, of Balliol College Farm, Newcastle-on-Tyne, having with his herd achieved this distinction no fewer than six times at Birmingham between 1883 and 1894. In the latter year he performed the feat of gaining with a three-year-old heifer the championship at both Birmingham and Smithfield. The Polled Cattle Society, established in 1879 to promote the interests of the breed, continues in a very flourishing condition.

The Galloway is in many respects similar to the Polled Angus, but it has some characteristics which stamp it as a totally distinct breed. The colour is the same, but their coats are rougher and their constitution hardier, enabling them to withstand the rigours to which they are exposed on their native pastures. They do not reach maturity quite so early as the Polled Angus, but they thrive well on high-lying and exposed situations, to which the cattle in the north-east are unaccustomed. Of late years a demand has sprung up for them in America, and their value has in consequence been much enhanced. They have been found an excellent breed for 'roughing it' on the prairie ranches of the Far West, and numerous consignments are now shipped annually. One valuable characteristic which they possess for ranching purposes is the suitability of the bulls for crossing with horned cows with the almost certainty of the produce being hornless. It is this impressiveness on the part of Galloway sires, together with their hardness of constitution that has brought them into so much prominence. A favourite cross with butchers is that between a Galloway cow and a Shorthorn bull—the progeny being generally of a bluish-grey colour; but the pure Galloway is also deservedly held in esteem on some of the best low country farms in the district as a fairly good milker. An impetus was given to cattle-breeding during the 18th century, when large droves were taken to England, chiefly to the counties of Norfolk and Suffolk. That trade went on increasing during a great part of the 19th century, but with the development of railways the droving business began to die out, and it has now altogether ceased, although large numbers of black cattle still continue to be despatched to the best grazing districts of the South, where they are finished for the fat markets. A greater number are, however, now fattened at home, but with the extension of turnip husbandry the head of native cattle

in the province has been much reduced, and sheep have gradually taken their place on many arable farms, while they have also been largely supplanted during the last forty years by the Ayrshire breed. The best of the young Galloway bulls are disposed of when a year old at a sale held at Castle-Douglas in the spring under the auspices of the Galloway Agricultural Society. There is always a large entry from the principal herds, and there is an unusually keen competition for what is known as the 'blue ribbon' of the breed. Prices for ordinary bull stirks range from £15 to £25; but the choicest of the pedigree animals realise £30, £40, £50, £60, and £70. The store cattle are generally sold as two and three-year-olds to low country graziers or dealers. The Galloway Cattle Society, established in 1877, has done much to bring the breed forward and to emphasise its good points. Writing at the close of 1894 the Rev. John Gillespie of Mouswald, Dumfriesshire, editor of the *Galloway Herd-Book*, says:— 'There has been comparatively little of special outstanding interest in the history of the old blackskins during 1894. While a few herds have been formed on both sides of the Border, it cannot be claimed that the breed is on the increase. It has been extending slowly but surely in the north of England, but the number of Galloway herds in Dumfriesshire and Galloway is slightly fewer than they were a few years ago. This is not due to any lack of appreciation of the breed, but rather to what may be termed a new Ayrshire "wave" that has been passing over the district. A large proportion of vacant farms in these counties that are offered in the public market to be let are leased by dairy farmers from Ayrshire, Lanarkshire, and Renfrewshire, especially from the first-mentioned county. The result is that the native farmers are to a considerable extent being supplanted by these incomers. Almost without exception they practise this dairy department of farming, and hence when the farm taken by one of these newcomers has hitherto been stocked with Galloway cattle, the Polled blackskins are dispersed, and their place is taken by the spotted and horned Ayrshire breed.'

It is universally conceded that the most picturesque breed of cattle is that now known as the West Highland. Many a landscape and animal painter has found them of invaluable service in turning out a pleasing picture, and in innumerable instances they have been thrust on to the canvas to heighten the effect of scenes with which they have little or nothing in common. Valuable as they have been to the artist, however, they fulfil a more useful function in the agriculture of Scotland, and continue to justify their existence as a breed whose place could not be effectively supplied by any other. Whether on their native heath-clad slopes or browsing in a nobleman's policies there can be no finer sight of animal life than a herd of these noble-looking 'Kyloes,' whose presence adorns alike the bleak mountain-side, the busy market-place, and the luxuriant park. The West Highland ox reaches the height of his beauty at the age of four years. His shaggy coat has then its best covering of hair; his magnificent head and horns have attained all the perfection of maturity; his long, level back, well-filled quarters, and finely-arched ribs, are fully developed; and his quick, fearless eye is alive with brightness and fire. At this age, when in the best of bloom, their prices range from £78 to £24. Argyllshire is one of the greatest cattle-breeding counties in the Highlands, the number it contained in 1894 being 61,340. With comparatively few exceptions these were all of the pure West Highland breed, and they also extend on the mainland into the counties of Ross, Inverness, Perth, and Dumbarton. They are admirably adapted to the peculiarities of the

soil and climate of the Highlands, and although they have had in some measure to give way before the inroads of sheep, the purity of the breed has been well preserved. Their fine constitution has rendered them utterly regardless of wind and weather; in many parts of the west country they are never housed, and artificial food is only supplied during the severest winters. Their sustenance is therefore picked up almost entirely from the natural herbage on their mountain home. The colour of the West Highlander varies from black to white, dun, red, and brindled. The best cross from this breed is with the shorthorn, and it is believed that this intermixture might with advantage be much more largely developed, so as to produce a breed of cattle that would embody the most valuable characteristics of the hardy Highlander with the early-maturing, fattening, and rich milking properties of the shorthorn.

Shorthorns, though not a distinctively Scottish breed of cattle, have yet many admirers in this country, and some very fine herds of the 'red, white, and roans,' as they are popularly termed, exist in the northern and eastern districts. They are valued not only for their milking qualities, but in a larger degree as beef-producers, and they are extensively used for crossing with the Polled Aberdeen or Angus, which gives a very satisfactory result. Young shorthorn crosses are imported pretty extensively for fattening purposes from Ireland and the North of England to the eastern and southern counties of Scotland, where they make rapid progress towards maturity. Within the last ten years what is now known as the Aberdeenshire type of shorthorns, evolved by Mr Amos Cruickshank, Sittytoun, have come to be far and away the most highly appreciated strain of shorthorn blood. In former times the two leading strains were the Booth and the Bates, and in the southern markets the Aberdeenshire type would hardly be looked at. Since then there has been a complete revolution in taste. For many years—up till 1888—mostly all the stock bred by Mr Cruickshank was exported to America, their extreme robustness of constitution, massive size, and great flesh-forming capacity for the production of beef, making them particularly suited for the herds of the New World; but when restrictions were imposed at the American ports in consequence of the prevalence of pleuro in this country, the Cruickshank shorthorns had to remain at home. Their pre-eminent qualities had been so fully proved on the other side of the Atlantic that breeders in this country began to recognise their worth, and they have since been 'booming' in the most extraordinary manner. Among the first to be struck with their great merits was Mr Tait, the Queen's Commissioner at Windsor, who secured the bull 'Field Marshal,' the sire of so many champions at the Royal, Smithfield, and other shows; and at the draft sale at Windsor in 1891 the famous champion bull, 'New-Year's Gift,' showing a strong infusion of north-country blood, was sold for the handsome sum of 1000 guineas. At the World's Fair at Chicago in 1893 the Aberdeenshire shorthorns or their descendants made a clean sweep of all the money prizes; and at the Smithfield, Royal, and Highland Society's shows during the last half-dozen years they have carried off the lion's share of the premiums. Mr Cruickshank retired from breeding in 1889, and the bulk of his herd was purchased by Mr Duthie, Collynie, who is now carrying on the work which Mr Cruickshank began, and his success is attested by the splendid average of £50 12s. made by his bull calves in 1894—a sufficient testimony to the high appreciation in which the stock is held. Cattle-feeding in Scotland is very skilfully managed, and no part of farm husbandry receives greater attention from the farmer. The animals are fed under cover, either tied up or in loose boxes, and

with a judicious supply of roots, cake, and straw they take on beef remarkably fast, and are ready for the butcher comparatively early. The advantage of covered courts for cattle-feeding—both with a view to the comfort and progress of the animals and to the improvement of the manure—is now being generally recognised, and in very few districts are cattle fed in the open.

Scotland has more than one-fourth of the sheep in Great Britain, the number returned for the northern part of the kingdom in 1894 being 7,272,864, of which 2,639,765 were lambs. Between 1877 and 1881 very heavy losses were sustained by flockmasters throughout the country by the ravages of disease and the severity of the weather during the lambing seasons, and to such an extent were sheep stocks being reduced that Her Majesty the Queen, in the spring of 1893, issued an order prohibiting the use of lamb at the Royal table during that season. The flattery that takes the form of imitation was offered by all fashionable circles, with the result that lamb became a drug in the market, and prices in a short time fell as much as 10s. per head. The outlook for the hill farmer was very serious, and something like a panic prevailed among flockmasters. Her Majesty's resolution was, of course, taken with the view of preventing the slaughter of large numbers of lambs, so as to increase the quantity of breeding sheep, but the demand for lamb for home consumption having almost ceased, prices had fallen so low that the farmer could not sell at anything like a remunerative rate his usual crop for the hogging season. The outcry reached the Queen's ears, the Royal 'edict' against lamb was explained away, the aristocracy returned to their delicacy and mint sauce, prices resumed their normal position, and the temporary panic passed off. The two purely Scottish breeds of sheep are the Cheviot and the Blackfaced, both with characteristics that adapt them to the varied conditions of the country; but there are also the Border Leicester, the Half-Bred, and the Blackfaced Cross, all of which enter largely into the sheep-farming of Scotland, while the Shropshire Downs are also spreading north of the Tweed, where they are becoming increasingly popular on account of their flesh-forming qualities and the high character of their mutton. The mountain breeds are the Cheviots and Blackfaced, with which the pastoral farms in the north and south of Scotland are stocked. On the lower grazings of hill farms Cheviots have been largely supplanted by half-breeds, whose money value is greater, and on the higher grounds they are being displaced by the more hardy blackfaced, so that the once-popular whitefaces have now disappeared from many grazings which a quarter of a century ago carried no other kind of stock. Both breeds are very active, but the blackfaced is much better suited for the higher ranges of the Highlands, the Cheviots preferring better pastures than the heath that is to be found on the hillsides. The wool of the blackfaced is coarser in quality than that of the Cheviot, but the staple is longer, and it is specially adapted for the manufacture of strong cloths. The higher price paid for Cheviot wool, however, gives it an advantage in this respect. The blackfaced does not make the same progress in fattening as the Cheviot, but the mutton of the former cannot be surpassed for sweetness. That the hardness of the Cheviot has been impaired is perhaps largely due to the introduction about forty-five years ago of a cross of Leicester blood, which, while it increased the size and appearance of the sheep, weakened their constitution and rendered them unable to withstand the blasts of winter in exposed situations. This falling-off in the popularity of the pure Cheviot is to be regretted, for it has been largely identified with the success of Scottish farming, and taken altogether there is probably no breed so serviceable to the farmers

of this country or that can be better relied upon to pay its way. The wool is fine, close, and short, the fleece generally weighing from 3 lbs. to 5 lbs., and the carcase is wealthy, varying from 18 lbs. to 26 lbs. per quarter. There has been no attempt made to improve the black-faced breed out of existence by crossing. Its present high state of development is due to careful and judicious selection, which is every year being more closely attended to, with the result that the improvement is more marked than ever. It would be impossible by any infusion of southern blood to add to the value of the blackfaces for the function they are called upon to fulfil. Their home is on the mountain-side, their fare is of the scantiest, and they are exposed to privations under which every other breed would succumb, yet they thrive admirably in their ill-favoured circumstances, and by most hill farmers are regarded as the only safe sheep with which to face a severe winter. The blackfaced is the most picturesque of all the breeds of sheep. His whole appearance betokens a boldness and love of freedom in harmony with the life he leads on his native pastures, and there is an air of defiance about him that well befits the mountaineer. His horns are beautifully curved, and with his shaggy coat impart a wildness not unsuited to his character, while the strong muscular body indicates the natural hardness of constitution that renders him invaluable to the stock-farmer of Scotland. The wool of the blackface is long and coarse, and the fleece weighs about 4 lbs. The average carcase of the sheep when brought to the scales is 60 lbs., but the best of the rams are retained for breeding purposes, and when sold bring very high prices if drawn from high-class flocks, as much as 100 guineas having been paid for a ram at the Lothian sales. In 1894 the best class of blackfaced rams were selling dearer than ever. In 1890 Mr Howatson of Glenbuch, at the Lothian sales, bought a ram from Low Ploughland for 100 guineas, and at Perth in 1894 a grandson of this sheep from the Glenbuch flock was sold at the record-breaking price of 110 guineas. Cheviots also broke the record in 1894 at the Hawick ram sales, a draft from the Hindhope flock realising £20 5s. 9d., the highest average ever reached for a draft of the breed. A good cross for fattening purposes is that between the blackfaced ewe and the Leicester ram. The produce is chiefly raised at a moderate elevation, and their weight is much greater than the blackfaced, while the quality of their mutton is very little inferior. Some splendid flocks of Border Leicester sheep are kept in the south-eastern district of Scotland, chiefly in Roxburghshire, for the purpose of supplying the demand for breeding rams to cross with Cheviot ewes so as to provide the necessary stock of half-bred sheep. These Border Leicesters were originally introduced to Scotland from the celebrated stocks of the founder of the breed, Mr Robert Bakewell, Dishley, Leicestershire, but in their new home they have been transformed into a much superior type to the English Leicesters from which they are descended, and for the purpose to which they are applied no better breed could be found. Between two and three thousand of these rams are sold annually at the Edinburgh and Kelso sales, and prices for well-bred animals range as high as 60 guineas, and even up to 195 guineas, which was paid by Messrs Clark, Oldhamstocks, for one of Lord Polwarth's rams. The sheep take on fat with remarkable rapidity, but their mutton is somewhat coarse and is not much in demand. Their chief value lies in the adaptability of the rams for crossing purposes, and the half-bred, which is the result of the Border Leicester ram and the Cheviot ewe, is the principal stock on lowland arable farms. It has for many years been growing in the estimation of farmers as perhaps the most profitable sheep that can be reared,

and it is to be found in the extreme north as well as in the Border counties. Another Scottish breed of sheep is the small but hardy type which is peculiar to Orkney and Shetland, and the principal characteristic of which is its soft, silky wool. The prices of sheep during season 1893 ranged as follows: Cheviot wethers, 26s. to 35s. 6d.; Cheviot ewes, 18s. to 28s. 6d.; Cheviot lambs, 8s. 6d. to 15s.; blackfaced wethers, 21s. to 37s.; blackfaced ewes, 12s. to 24s.; blackfaced lambs, 7s. to 14s. 6d.

The breeding of pigs has not received so much attention in Scotland as in England, but the improvement, compared with the general run of farmers' pigs a quarter of a century ago is very marked, there being an absence of the long-snouted, long-legged, and lanky animal which was formerly too common. Its place has been taken by a better-proportioned and more quickly-maturing type; but, as we have said, there is room for further improvement before Scottish farmers can reach that high degree of perfection which has been attained by many English breeders. In 1894 there were 148,535 pigs in Scotland, or fully 29,000 more than in the previous year, a sufficient indication that they are becoming more popular among the live stock of the farmer. The four south-western counties contribute 48,070, or one-third of the whole stock. These being the principal dairy counties, the whey from the cheese is largely used in the feeding of pigs, and forms an excellent diet when mixed with Indian meal or some similar substance. Some years ago the custom which most prevailed in the south-west was to feed the pigs till maturity, then slaughter them on the farm and sell the pork by the carcase to local bacon-curers; but with the institution of auction marts, and the immense importations of foreign ham, this trade has greatly fallen off, and a more ready and convenient market is found to exist in the public auction sales, where the swine are exposed in a live state and sold as a rule to the pork butcher. Notwithstanding the huge supplies received from Chicago, the piggy is still found a profitable auxiliary to the small farmer of this country, and it might with advantage be further developed. Of recent years they have been the most valuable branch of the farmer's business, and have been paying very well. Many of those who have gone in for valuable stocks and have kept a high-class herd, have made a good thing of it, and the prevalence of hog cholera in America seems to point to even higher and more remunerative prices being obtained by pig-breeders in this country.

Ensilage.—The term 'ensilage' may be comparatively new in the agricultural world, but the system it denotes belongs to the ancients. The preservation of fodder in pits has long been practised in other countries, but it is only a dozen years since it was first brought into practical use in Britain. Introduced into England from America in 1882, it found its way to Scotland in the following year, when several experiments, generally attended with success, were made in the new method of preserving grain and grasses independent of the weather. The Legislature so far recognised the system, that in the Agricultural Holdings Act of 1883 silos were made an improvement for which, having been erected with the landlord's consent, compensation could be claimed at the end of the lease. The new system was at first highly popular, and silos were erected in almost every county in Scotland, there being a good prospect that they would become a permanent adjunct of the farm steading. Since then, however, a marked change has come over the feeling of farmers, who find that in a good season it is preferable to turn their grass into hay and eat their aftermath, either on the ground or in the courts. Ensilage has accordingly become decidedly unfashionable, and notwithstanding

its promise of being a success when first introduced during a period of great depression, and when it seemed to hold out hopes of the farmer being in a manner placed independent of the weather in securing nutritious food for his stock during winter, the system has now fallen off in popular favour, and is practically in desuetude. In many places, where large sums of money were spent in erecting silos, the buildings are standing empty or have been devoted to other purposes.

Dairy-farming.—A too much neglected branch of Scottish farming is that of dairying, which has been left entirely to the south-western counties, where the Ayrshire cattle have their home; but even in that district there was not for some considerable time great energy shown. Cheese makers; although they might satisfy the Scottish palate, had to produce an article that would meet the English taste and could compete in the London market with the English Cheddar. A Scottish Dairy Association was formed in 1884, with branches in all the south-western counties; the Highland and Agricultural Society instituted a Dairy Department; and local interest showed itself fully alive to the importance of this branch of farming. Forty years ago the cheese manufactured in Scotland was known as Dunlop, and it was generally of an inferior character. The Ayrshire Agricultural Association—which in point of enterprise is hardly second to the Highland Society—took up a question that so materially affected its own district, and sent two of its members to obtain information in England as to the best modes of cheesemaking. A Somerset farmer and his wife were in 1855 introduced to Ayrshire for the purpose of imparting instruction as to the making of Cheddar cheese, and the new mode was adopted with such good results that the English makers have been entirely eclipsed at their own trade. The change in the system of manufacture is estimated to have added 10s. per cwt. to the value of the Scottish cheese, which indicates a rise of over £120,000 per annum in the returns from the dairies of the south-western counties. Dairying has paid well—the profits from this department having been more satisfactory than from any other—and farmers are not disposed to neglect a good thing. A remunerative trade is also done in the sale of milk in the large centres of population. Dairy farming has indeed been found to be the best net-payer of late, and it is growing in popular favour. The Somerset system held the field till 1884, when the Ayrshire Association brought Mr R. J. Drummond from Canada to be itinerant instructor, and he taught the Canadian system, which differs considerably from that prevailing in Somerset—the main point of difference being that the fermentative process is brought about by heat in the steam jacket of the cheese vat, and not by adding old whey to the coagulated milk, as is still done in the south. The Canadian system is now almost exclusively followed in Scotland, and of recent years Scottish Cheddars made on that system have been exceedingly successful at the London Dairy Show, carrying off champion honours on two occasions. Mechanical appliances have come largely to the aid of the dairy-farmer and greatly expedited his labour. In 1879 the first cream separator in this country, the De Laval, was shown at the Kilburn Show. The milk was placed in a steel bowl, which made some six thousand revolutions per minute, and the milk being heavier than the cream it was thrown to the outside, and the cream rose in a column separated from the milk. By what is called ‘a mechanical butter-maker,’ the water and buttermilk are pressed out of the butter by means of a fluted roller, and the material is never brought into contact with the hand. In this way the fatty globules are not broken up nor the texture of the

butter injured. The separators, a good many of which are now in use, have been much improved since then, and the separating capacity doubled by the introduction of thin discs in the body of the revolving bowl. Another important development in the progress of dairying is the invention in recent years of milking machines for drawing the milk from the cows by a vacuum. There are two of these at present in the market—one by Mr Murchlands, sanitary engineer, Kilmarnock, and the other by Mr Elliot, auctioneer, Lanark. The latter has been bought up by a syndicate of dairy farmers, who have great faith in its efficiency. Should this machine prove the success which is predicted for it, British dairy farmers will have to face a keener competition from abroad, as it is the labour difficulty that prevents America and the colonies from going more extensively into dairying than they at present do. Asplendidly equipped Dairy Institute has been established in Kilmarnock with Mr Drummond as dairy instructor, and a complete course of scientific instruction bearing upon dairy work is now given there. That institution also gives diplomas for efficiency in dairy practice and science, and 466 students attended in 1894. Numerous dairy instructors have also been sent out by County Councils and others throughout the country, and they have done much useful work. By means of these instructors the butter-makers of the country have been sufficiently warned against the old and bad system of churning the butter until it all comes into a lump; and they have been shown how to prevent the butter becoming rancid, by stopping the churning when the butter reaches the granular stage. In this way the milk is expelled and the pure butter fat is secured, which will keep for any length of time. The Kilmarnock Cheese Show, held under the auspices of the Ayrshire Agricultural Association, is the largest in the world, the pitch amounting annually to about 500 tons, while buyers attend the fair from the Continent, America, and Australia. Cheese is now regarded more as a substantial article of food for the working classes than a toothsome dainty for the rich, and there is consequently a greater demand for the cheaper kinds imported from America. Notwithstanding this foreign competition, however, prices for good Scottish Cheddar keep well up, ranging in 1894 from 57s. to 61s. per cwt.; while Dunlops brought 45s. to 57s.

Drainage.—Thorough drainage is at the very root of good farming, and to the improved system introduced during the last seventy years is primarily due the present high condition of most of the arable land in Scotland. James Smith of Deanston was foremost in this as in many other matters which aimed at benefiting his brother agriculturists. In 1823, in the parish of Kilmadock, Perthshire, he brought into practice his system of parallel or ‘thorough’ drainage, which was to change the appearance and character of whole districts throughout the country. Smith’s views were that there should be frequent drains at intervals of from 10 to 24 feet; and that the depth should not exceed 30 inches, his sole object being to free that depth of soil from stagnant and injurious water. Josiah Parkes, an eminent authority of his time, differed from Smith in his views of under-drainage. He preferred that the drains should be less frequent, being from 21 to 50 feet apart, and that the minimum depth should be 4 feet. Smith’s system was the most popular in the country at the time, on account of its simplicity and cheapness; but the Enclosure Commissioners adopted deep drainage as the rule when disposing of the loans under their control.

Stones were at first used to form the conduits for discharging the water from the drained soil, but soon

afterwards machines were devised for making tiles and pipes of clay, the first of these, the invention of the Marquis of Tweeddale, being exhibited at the Highland Society's Perth Show in 1836. Other machines quickly followed, and the cost of making the tiles being much reduced, a great stimulus was given to thorough underground drainage, the merits of which were at once recognised as interfering less than surface draining with the nutritive ingredients of the soil. So extensively has it been carried out that the old plan of forming the surface soil into ridges, with open cross-cuts in the hollows to carry off the water, has been almost entirely abandoned, and the land is now laid as flat as possible, which conduces greatly to tillage operations and the working of the reaper during harvest. The Drainage Act of 1846, authorising loans from the public funds to promote the improvement of land by works of drainage, was more largely taken advantage of by proprietors and tenants in Scotland than in either England or Ireland. With the introduction of tile pipes the old stone drains fell into desuetude, and the new system largely promoted the draining of land for turnip cultivation. The horse-shoe was the first form of tile pipe, but that has been superseded by the cylindrical pipe, of about 2 inches diameter, which takes up little room, is strong and light, and forms an efficient channel for the water. If the work is well done, the pipes should last for about fifty years.

No great practical success has been achieved in the way of draining by machinery. On favoured soils the mole-draining plough might perform good work at a moderate depth. Its mode of working is to leave an open channel in its progress through the soil, and the water is carried from that channel to the main drains. Messrs Fowler introduced a draining plough which was able to make a complete pipe-drain at a single operation, the pipes being strung on a rope and drawn through the soil behind the mole fixed on the point of the coulter. It could be worked to a depth of $3\frac{1}{2}$ feet in suitable soils, and when shown at the Royal Society's Show at Lincoln in 1854 it seemed to give satisfaction; but it could not be practised to any great extent in this country. The most ingenious of the various draining machines was the invention of Messrs Robson & Herdman, which was exhibited at the Derby Show of the Royal Agricultural Society of England in 1881. By means of this implement the drain was excavated by a series of revolving buckets cutting to the required depth and fall, the drain pipes being laid and the soil returned to its position by shoots. The machine was driven by a wire-rope, like a steam plough or cultivator, the whole process being accomplished automatically. The price, however, was so high—being nearly £400—as to be practically prohibitive, and no more simple or less expensive draining machine has since been brought out.

Farm Machinery.—The agricultural engineer has done more than keep pace with the advance in agriculture. He has anticipated the wants of the farmer, and has provided him with a complete set of farm machinery, equipped with which he is placed in a much more advantageous position for prosecuting his business than were the farmers of preceding generations. Mechanical ingenuity has shown itself prominently in every branch of the farmer's industry, and something like a revolution has been effected in the methods and appliances of husbandry. Steam and machinery have largely taken the place of manual labour; self-delivery reapers and binders have ousted the primitive sickle from the field; the thrashing machine has been substituted for the slow and laborious flail; and the work of harvesting has in consequence been lightened and cheapened, while the period necessary to secure the crops has been much shortened.

The most essential implement of tillage is the plough, which plays such an important part in the cultivation of the soil, the thorough stirring of the land being necessary to secure a proper 'tilth' and destroy vegetable and animal pests. The swing-plough has met with general acceptance throughout Scotland, and it is the one in use on most farms. Its utility has been thoroughly tried, and it has been found to answer best the conditions of Scottish agriculture. Introduced by James Small in 1760, it speedily supplanted the rude and cumbersome Scottish plough drawn by oxen. It has undergone considerable improvements, but its main features are unaltered. Wheel-ploughs are not popular in the northern part of the kingdom, and they have never made way to any extent on this side of the Tweed. In 1866 Mr Pirie of Kinnmundy invented a double-furrow plough set on a frame with three wheels, and it has been attended with considerable success, although the single-furrow swing-plough, drawn by a pair of horses, still retains the favour of farmers. The importance of stirring the soil to as great a depth as possible led Mr Smith of Deanton to follow up his system of thorough drainage by introducing a subsoil plough, which has since been improved so as to lessen the draught and friction. Drill-ploughs, with double mould-boards, are used for laying up the furrows of green crops, this implement having been brought into requisition with the system of growing green crops in parallel rows.

The farmers of Scotland, while they have been quick to avail themselves of modern improvements in the appliances for successful husbandry, have not shown any eagerness for the application of steam to the cultivation of the soil, and accordingly horse-power is still the recognised means of draught, except in one or two localities where special circumstances favour the working of the steam-plough. Although first introduced to Scotland about half a century ago, the steam-plough has not made much progress, there being probably not more than fifty sets of the tackle in the country. This may be partly due to the elaborate and costly apparatus necessary, but it is also owing in great measure to the satisfaction given by the swing-plough as a means of cultivation. Where deep ploughing is desirable, there can be no question as to the advantages possessed by the steam cultivator, but for its successful working large square fields, with a comparatively flat surface and an absence of stones and boulders, are almost essential, and these conditions are not always obtainable without a deal of extra labour, for which the celerity of the steam-plough would hardly compensate. The steam-plough was first brought under the notice of Scottish agriculturists by the eighth Marquis of Tweeddale; and encouraged by the success attending the application of steam-power to thrashing and other operations of the farm, the Highland and Agricultural Society in 1837 offered a premium of £500 for the successful cultivation of the soil by steam, the operations to be judged of in relation to the cost of animal power. Although the premium was continued till 1843, no one competed for it, and it was then withdrawn. A practical demonstration of the working of the steam-plough—although attended with unfortunate results—was, however, given for the first time in Scotland in 1837, when an implement brought out by Mr Heathcote, M.P., and which had been seen at work in Lancashire, was tried on Lochar Moss, near Dumfries, in connection with the Highland and Agricultural Society's Show. The plough was in operation for three days, and seemed to work with a fair degree of success, but during the following evening it disappeared in the moss, where it still lies buried. Nothing daunted by this untoward circumstance, the National Agricultural Society, urged on

principally by the then Marquis of Tweeddale, continued its efforts for steam cultivation, and they were ultimately to some extent successful. Experiments were carried on by the marquis on his home farm at Yester, but on his lordship's appointment to the governorship of Madras they were abandoned, just when the result promised to be satisfactory. The Highland and Agricultural Society renewed its offer of a premium, and in 1852 Mr James Usher, Edinburgh, was awarded a sum of money for an invention, the principal features of which were two large cylinders, the first carrying a locomotive engine, and the other bearing a series of ploughs arranged in spiral form, which turned over the soil as the engine advanced. This, however, did not meet the requirements of agriculturists, and it was not till 1857, when Mr John Fowler of Leeds brought forward his steam tillage apparatus, that anything approaching a satisfactory solution of the difficulty of applying steam to the cultivation of the soil was arrived at. Mr Fowler was at the time awarded a premium of £200 by the Highland Society. Several sets of steam-ploughs were afterwards brought into practical use in Scotland, companies being formed in some districts for the purpose of buying the machinery and hiring it out to individual farmers, but the system has not been extensively adopted. In most of the north-eastern counties cultivation by steam-power is more or less carried on, but there are several obstacles yet to be overcome before the steam-plough will rank as an ordinary implement of the farm. It was, however, along with other specially constructed machinery, successfully used at Lairg and Kildonan in Sutherland in the reclamation of large tracts of waste land, a purpose for which it seems admirably suited; and it may yet be got to perform good work on the heavy clay soils which are so difficult of cultivation.

Grubbers, harrows, and scarifiers have all been improved in keeping with the advance of agriculture, and have been brought into harmony with other modern implements of tillage, while the old wooden field-roller has been reformed out of existence, and its place taken by implements of easy draught and superior design. The latest improvement is the cylindrical roller, filled with sand or water, which seems to serve its purpose better than any previously introduced. Broadcast and drill sowing-machines, and manure distributors, have likewise been the objects of the engineer's attention, and at seed-time effect a considerable saving of time and money, while the seed is deposited in its bed with a regularity and evenness that were not obtained under former methods of sowing. The uncertainty of the seasons apart, the farmer now approaches the period of harvest with a greater degree of confidence, begot of the knowledge that he has done all in his power, by improved methods of tillage and cultivation, to deserve, if he cannot command, a good yield of the fruits of the earth.

In no other implement of the farm, perhaps, has there been so much improvement within the last thirty years as in the reaping-machine, the familiar click of which is now to be heard on every holding. Almost every year has seen some alteration for the better in its details, and it has now been brought as near perfection as it seems possible to imagine. In 1805, a millwright at Castle-Douglas obtained a premium from the Highland and Agricultural Society for a reaping-machine, which also delivered the grain in small sheaves; and in 1811 Alexander Kerr, Edinburgh, and James Smith of Deanton each produced a new reaper having large circular rotating cutting frames. Although reported upon favourably at the time, none of these machines had a permanent success. The first reaping-machine of real practical value was invented by the Rev. Patrick

Bell of Carmyllie, Forfarshire, in 1827, who then received a premium of £50 from the Highland and Agricultural Society, and who forty years afterwards was presented with £1000 by the agriculturists of Scotland, in recognition of his eminent services in producing an implement which had done so much to lighten the labours of the harvester. Most of the improvements in the reaper have, however, been effected by English and American engineers, and it is to the reaping-machines shown by American makers at the Great International Exhibition of 1851, that we owe the recognition of this implement as one of the chief mechanical forces of the farm. From the somewhat crude implement arranged by Mr Bell to the manual-delivery reaper of forty years ago was a decided step in advance, and from the latter have been developed the elegant self-delivery machines, of which so many are now manufactured by the principal implement makers in the country, and the still more servicable combined reaper and binder, the efficacy of which has been thoroughly demonstrated at public trials. The self-binding reaper is indeed the most complete machine that has yet been placed at the service of the farmer, and it aims at accomplishing a greater amount of work than any other. It is of easy draught for a pair of horses, and requires only one man in attendance, whilst the grain is regularly delivered in compact sheaves, securely tied with string, and of a uniform size, where the crop does not vary much in bulk; so that it is generally admitted that its sheafing and binding are much superior to the same work done by hand labour. Considerable improvements have been executed on the machine, which has been much simplified in working and cheapened in price, so as to bring it within the reach of the ordinary run of farmers.

Steam has of late years proved a valuable auxiliary to the thrashing-machine. The first thrashing-machine of which record is made in Scotland was constructed in 1740 by Mr Menzies, advocate, and it was driven by a water-wheel. It was only an elaboration of the flail principle, and its inefficiency was soon demonstrated. Other inventions at this time proved equally unsatisfactory; but in 1787 Andrew Meikle, Houston Mill, East Lothian, succeeded in solving the problem of how best to separate the grain from the straw by machinery, and the principle of his cylindrical machine is that which has since been acted upon. Meikle's thrashing-machines soon became popular in Scotland, and the inventor was in 1810 awarded a premium of thirty guineas by the Highland and Agricultural Society. An interesting fact is that in Meikle's own county of Haddington between 300 and 400 of his thrashing-mills were erected within twenty years from the date of the patent, the estimated expenditure being £40,000, which speaks highly for the enterprise of the farmers of that period. On a well-equipped farm a fixed engine drives the thrashing-mill and a full set of food-preparing machinery; but a good business is done by portable thrashing-machines driven by traction engines, which travel from place to place, and perform their work in the field or stackyard. They have indeed become so important a feature of rural husbandry, that an Act of Parliament regulates the movements of such road locomotives on the public highway. Wining and dressing machines are closely allied to the thrashing-mill, and they have been perfected in a corresponding degree; the splendid fanners of the present day working with all the smoothness that mechanical skill can secure, and dressing the grain with an expedition and efficiency that could not be obtained a quarter of a century ago; although the leading principle of the fanners first introduced into Scotland in the latter part of the 18th century—by James Meikle, father of the inventor of

the thrashing-mill has been retained. The securing of the hay crop, with such a variable climate as that of Scotland, is a work of great importance, and is attended with considerable risk. The work has, however, been greatly facilitated since the introduction of hay-making machines, which have largely taken the place of the simple fork for turning the hay in the field, and on which some improvements continue to be made. The horse-rake is also a great labour-saving appliance during harvest, and is now in common use on all but very small farms.

The inventions of the agricultural engineer have been by no means confined to harvesting machinery. In every department of the farm is to be seen ample evidence of his activity, and the resources of his fertile brain seem anything but exhausted. Potato-planters, though not yet in general use, promise to play an important part in the cultivation of that valuable tuber. The machines are exceedingly simple in construction, and require no mechanical skill in working. They are made for single or double rows; the potato setts are placed in a hopper, from which they are carried by a chain of cups, and deposited at regular intervals in the furrow. Then the potato-digger, another implement of recent invention, comes to the farmer's assistance in raising his crop. Both are implements which effect an immense saving in manual labour, while the work is done much more quickly. Drill sowing has long been in use in this country, both for depositing the seed and artificial manures; but it is only of late years that the turnip-thinning machine has been brought forward. It has not, however, yet established itself in the confidence of most farmers, the majority of whom still cling to the old hand-hoe. In some districts of the country, where circumstances permit, the hoeing of turnips is accomplished by gangs of boys, hired from reformatories or industrial schools, at from 6d. to 9d. each per day. These boys, discarding all implements, go to work with their hands, and get through it much more rapidly than workers with the hoe, while the thinning is more regularly performed, and there is less damage to healthy plants. The turnip topping and tailing machine is another of the set of implements that were designed to facilitate the raising of the root crops, but its success has only been partial as yet, though it embraces features in its construction that seem to render it worthy of more general adoption for the work which it aims at accomplishing. Turnip-cutters on the most approved principle, by which the roots are at once cut into convenient sizes for the different classes of stock; chaff-cutters, which embody many improvements on the old implement; new corn-crushers, grist-mills, and pulping machines—these are only a few examples of what has been done in the way of providing the stock-breeder with appliances that lighten his labour, economise his time, and produce better results in the feeding of his animals. As showing the great strides that have been made in the manufacture of agricultural implements, and the increased attention that is paid to that industry, it may be mentioned that sixty years ago only nine implements were shown at the Highland and Agricultural Society's Show, while at the Centenary Exhibition of the Society, held in Edinburgh in 1884, the implements brought forward numbered 2300, and even this large display was exceeded by 300 at the Aberdeen Show in 1894.

Wool.—The number of sheep in the United Kingdom shows a moderate increase over the ten years from 1855 to 1894. In the former year the flocks of Great Britain numbered fully 26,500,000, and they may now be considered to have reached 31,000,000. It says much for the vitality of the trade in mutton, wool, and skins that this should be so, for in this department of

the farmer's industry the competition from abroad has been as fierce as that which he has had to face in the grain markets. It has to be noted, however, that on the decade there is really very little change in prices, and that the variations have not been of a troublesome character. The high prices of fifteen to twenty years ago have evidently gone with the relatively high prices of grain of the same period. At the beginning of 1895 Lincoln hog wool (washed) may be quoted at 10½d. per lb.; South Down hog, 11½d.; Scottish half-bred hog, 11d.; Cheviot hog, 11d.; Highland (blackfaced), 5½d.; all of fairly good quality. With the exception of Highland, which continues in demand for American and export trade, these wools have been so successfully 'imitated' by crossing, in the Australasian colonies, that our manufacturers have a choice of what for their purposes are 'home wools,' from a wide range of qualities other than the superfine wools roughly classified as 'Saxony.' The manufacturer has steadily raised the public taste for the finer class of tweeds and dress stuffs. In spite of the dulness complained of in our manufacturing districts, the consumption of home and foreign wool has been very large. Improved machinery has shortened the journey of the raw material through the mills, and is accountable for the partial lack of employment which has been complained of. The wool markets of the country are practically dominated by the London auctions of colonial wool. These are attended by manufacturers and dealers from France, Germany, and America, as well as by our own countrymen, and this constitutes the sale room a species of World's market. The supplies have largely increased within the decade, in spite, too, of a great expansion in the 'direct shipment' trade from the colonies and South America to France and to North America. The imports to London and their value at intervals are worth noting, as follows:—

	Lbs.	£
1880	463,508,963	26,375,407
1885	505,687,590	21,177,638
1890	633,028,131	27,158,762
1893	671,663,194	24,437,178

For eleven months of 1894 the imports were 670,931,498 lbs., and their value £23,732,324. These figures are an index of the tendencies of prices, as it will be seen that the greater quantity has occasionally been of less value than the smaller. The extraordinary increase in the trade in frozen meat has given an impetus to the sheep-breeding industry in our colonies, and in South America in particular, and this would seem to preclude any reason to expect a reduction in the quantity of wool produced relatively to the world's increase in population. Some disappointment is felt that with the passing of the Wilson Tariff Bill, admitting 'free wool' into the United States, an appreciable increase in price did not take place. Indeed, since the bill became operative (1 Aug., 1894) the price of wool is fractionally lower. The American demand was largely anticipated in direct shipments to New York, and supplies in the London market have been plethoric, so that the aid to a healthy trade in raw wool and in manufactured goods which the bill presages must be looked to as quietly taking effect. Of this there are evidences in the improved returns of our foreign trade in wool yarns and fabrics. Another free-trade campaign in the States may not improbably result in the total or partial abolition of remaining duties on woollen goods and yarns. Our woollen industries at the beginning of 1895 may be described as flourishing, and not as languishing, in spite of the fact that the margin of profits to all concerned is somewhat narrow. Farmers can always obtain current prices at the fairs and wool sales after clipping time, but in view

of the conditions of the world's wool trade it does not seem an advisable policy to withhold their produce in the hope of any appreciable advance in quotations.

Agricultural Legislation.—It cannot be said that agriculturists as a class have received too much attention at the hands of the Legislature. Prior to the extension of the franchise in 1885 tenant-farmers formed the bulk of the electorate, yet no industry was so meagerly represented as theirs. They were rather averse to proclaiming their grievances and supplicating Parliament to interfere in their behalf, but a long period of adverse seasons, together with the losses entailed by the one-sided contracts into which they had entered, compelled them to make their case known. That there was depression in its acutest form was too patent to admit of question, and the Beaconsfield Government in 1879 required little persuasion to appoint a Royal Commission to inquire into the condition of agriculture in the country. Following on their report, Mr Gladstone's Government in 1883 passed the Agricultural Holdings Act, which for the first time secured to tenants compensation for their unexhausted improvements, while power was also given to the tenant to bequeath his lease. One great drawback in the measure is that compensation is only given to a 'quitting' tenant, so that a man must leave his holding before he can receive any pecuniary consideration for his improvements, and there is no provision to prevent his rent being raised on his own improvements. Among other legislation affecting agriculture was the abolition of hypothec in 1879, but the Act of Sederunt was left, and it has proved exceedingly irksome. The Ground Game Act of 1880 was supposed to be a liberal concession to farmers whose crops had been eaten up by hares and rabbits which they dared not destroy, but the interpretation which the law courts have put upon its terms has rendered it almost nugatory, the powers of the tenant to snare being confined to the rabbit-hole, where it is practically impossible to set traps. The malt tax was abolished by Mr Gladstone, but the imposition of a beer duty in its stead left the incidence of the tax very much as it was, and little satisfaction was expressed at the change. A great many farmers complain that the abolition of the tax had the effect of reducing the price of barley by 5s. a quarter. The Cattle Diseases Act of 1884 was a much-needed measure, and under it pleuro was stamped out, and the harassing restrictions often imposed during the prevalence of that disease have been got rid of. Foot-and-mouth disease was also successfully dealt with, and the Department of Agriculture is at present (1894) engaged in removing swine fever as the only existing disease among the live stock of this country. The Weighing of Cattle Act provides that a weigh-bridge must be kept at all public places for the sale of cattle, so that the weight is known before they are sold, and this method of disposing of the animals by live weight is being largely adopted by farmers. By the Fertilisers and Feeding Stuffs Act of 1894 it is provided that merchants selling manures or feeding stuffs shall supply the purchaser with an invoice stating the constituents of the goods, and County Councils are required to appoint district analysts, so that farmers may be protected against fraud and obtain facilities for having their feeding stuffs and manures analysed at the cheapest possible rates. The Small Holdings Act, passed in 1892, enables County Councils to purchase land and break it up into small holdings, but the measure is practically inoperative in Scotland on account of the cost that would be entailed in the erection of buildings and other expenditure, which the occupants would not be in a position to bear.

A Mice Plague in the Border Counties.—In the course of 1890 and 1891 the Border counties of Scot-

land were infested by a mice plague which assumed alarming proportions and devastated large tracts of country. The species of rodent which caused the mischief was the short-tailed field mouse or field vole, known as *Arvicola agrestis*. The mice appeared in limited numbers in 1888 in the Southern Highlands of Scotland, and they multiplied with alarming rapidity and spread in different directions until the plague had reached such dimensions that the area attacked extended 60 miles from E to W and from 12 to 20 miles from N to S. Its ravages were compared to those of the locust: the uplands of the counties of Dumfries, Roxburgh, Selkirk, and Lanark were overrun by the pest, and it spread into the adjoining counties of Peebles and Kirkcudbright. Thousands of acres of the best grass lands were totally destroyed for sheep pasture, one writer estimating that £100,000 would not cover the damage done by mice in the Border counties during the year. Entire hirsels of sheep had to be taken off their usual ground and sent elsewhere to winter, one farmer in Roxburghshire having in this way suffered injury during 1891 to the extent of upwards of £540. The Board of Agriculture instructed experts to inspect the infected grounds, and in the summer of 1892 the Government appointed a Special Committee, presided over by Sir Herbert Maxwell, Bart., M.P., to inquire into the subject. The Committee held sittings in several centres of the districts attacked, and at the conclusion of the inquiry the chairman visited Greece to investigate the operation of Professor Loeffler's mode of inoculation, which was claimed to have been effective in extirpating a plague of mice which had occurred in Thessaly similar to that experienced in Scotland. The witnesses who appeared before the committee generally attributed the outbreak to two causes—a succession of favourable seasons for the multiplication of the voles and the undue destruction of their natural enemies—such as hawks, owls, buzzards, stoats, and weasels—by persons interested in the preservation of game, together with restrictions as to the burning of heather. The lambing season of 1892 in the south of Scotland was quite an average one, and the extraordinary death-rate among ewes and the deterioration in the number and quality of the lambs were attributed to the scarcity of grass caused by the ravages of the voles. The committee reported in March, 1893, to the effect that they were unable to recommend any specific method of dealing with the outbreak, and that they thought that birds and beasts of prey, even had they been wholly unmolested, would not have availed to avert the plague, though they would probably have greatly mitigated its severity. They urged farmers and shepherds to be on the alert for any future outbreak, in order that palliative measures might be adopted, not in isolated cases, but everywhere throughout the district. The most effective measures appeared to be periodical and timely burning of the grass and heather, followed by active pursuit of the vermin by men using spades and dogs. The committee found themselves precluded from reporting in favour of Professor Loeffler's system, as the inoculation had not been successful in stamping out the plague. Meanwhile, before the committee's report had been published, the voles had disappeared as mysteriously as they had come.

The Highland Crofters.—No account of the agriculture of Scotland would be complete without some reference to the peculiar condition of the smaller tenants of the Highlands and Islands. The system of agriculture pursued by the crofters, or the smaller tenants, is of the most wretched description. In many districts, particularly in the Long Island of the Outer Hebrides, the plough is unknown, and the people turn over their half-exhausted soil with a peculiar wooden instrument which goes by the name of the *Cus Chrom*. What may

be termed the higher agriculture of the Highlands, as distinguished from that pursued by the mass of the people, or the crofters, has undergone various changes since the Rebellion of 1845. Prior to that period the chiefs let out the land to 'tacksmen'—frequently men of gentle blood, cadets of the chief's family—who in turn sub-let it to the common people. But after the Rebellion, when feudal power and homage were swept away, the tacksmen were deprived of this privilege, the proprietor finding that if the people held directly under himself he could obtain more rent, more security, and more authority as a landlord. This led to discontent on the part of the tacksmen, a number of whom on Lord Macdonald's estates bound themselves not to offer for any farm that might become vacant. This combination failed and the new system gradually extended, but it only led up to another and a most important change.

The chiefs began to be sorely tried by their new tenants, who became so numerous that estate regulation, as well as collection of rent, became matters of difficulty. 'The men of Kintail,' says one writer, 'held a large tract of land in Glengarry as a summer *shealing* or grazing for their cattle, for which they paid only £15 of annual rent. The ground was examined by a sagacious sheep-farmer from the dales in the south. He offered no less than £350 of rent—about half the value of the whole estate—and, having obtained possession, stocked it with Cheviot sheep, and died a richer man than his laird.' It was impossible for proprietors to resist temptations like this. The patriarchal system was forgotten; the stranger was preferred. In the course of time in several Highland counties great sheep farms were formed, the people having been removed nearer to the sea-coast, where they might unite fishing with agriculture. Many emigrated. A new system—that of extensive sheep-runs occupied by men of skill and capital—was introduced. Sheep-farming extended, roads were made, a higher class of tenants was in course of time obtained, and the large farms were so managed as to yield during many years high profits and corresponding augmentation of the rent-rolls.

The chronic state of the crofter population during the past generation has been one necessarily of poverty and discontent. They complain that through past evictions—evictions to make room, in the first place, for the large sheep-farmers, and latterly to make room for deer—they are confined within narrow limits of inferior and exhausted soil. Their contention was that they were always subject to arbitrary increase of rents, to arbitrary removal without compensation for improvements, and to harassing estate regulations. A crisis was brought about by the great land agitation, which has troubled the Highlands and Islands during the past twenty years. It broke out in Valtos, a wild and distant township in the north of Skye, where, on the alleged ground of arbitrary and unjust augmentation of rent, the people refused to pay any rent at all, and stoned the officers who came among them to serve the Queen's writs. From Valtos it spread throughout the whole of the Islands and to the Clyde estate in Caithness-shire, to many districts of Sutherlandshire, and to the west of Ross. The flame kindled in Skye extended throughout every crofter district in the Highlands and Islands.

A riot at the Braes of Portree, when a force of seventy policemen arrested a number of crofters guilty of having deforced a sheriff-officer; a similar riot in Glendale; the despatch of H.M. gunboat *Jackal*, with a special Government Commissioner on board to remonstrate with crofters guilty of a breach of interdict pronounced by the Court of Session against putting their stock on hill grazings that did not belong to them; a spirit of tur-

bulence generally throughout Skye and the Lews; and the legal proceedings taken by an extensive holder of deer forests for the eviction of a whole township of cottars from the estate of Kintail—roused the feeling of the country, attracted the attention of Parliament, and led the Government in March, 1883, to take the important step of appointing a Royal Commission to inquire into the condition of the crofters and cottars of the Highlands and Islands of Scotland. The Commission, over which Lord Napier and Ettrick presided, found that the crofter population suffered from undue contraction of the area of holdings, undue extension of the area of holdings, insecurity of tenure, want of compensation for improvements, high rents, defective communications, and withdrawal of the soil in connection with the purposes of sport. Defects in education and in the machinery of justice, and want of facilities for emigration, also contributed to depress the condition of the people; while the fishing population, who were identified with the farming class, were in want of harbours and piers, boats and tackle for deep-sea fishing, and access to the great markets of consumption. At the Martinmas of 1884 a 'no rent' policy was adopted throughout the greater part of Skye, the Lews, and more notably in the Long Island, where the tenants of one very extensive proprietor absolutely refused to pay any rent whatever—not alleging poverty, but stating that they would withhold rent until the land was fairly divided among them. Accordingly, attempts to serve summonses of removal in the Lews and in Skye were defeated by the mobbing and deforcement of the officers. It became necessary to send a military expedition, with four ships of war and 500 marines, to Skye in November, 1884. This display of force preserved order; and the marines were subsequently used to support the police in apprehending crofters in Skye and the Lews accused of acts of deforcement.

The disturbed condition of the Hebrides was partly the reason why the Government, at the beginning of 1886, acting upon the recommendations of the Napier Commission, brought in a bill which was passed in June of that year as the Crofters' Act. Notwithstanding this, however, there was, in the summer of 1886, rather a violent outbreak in the Island of Tiree which had to be quelled by the presence of a force of marines and one or two warships. Later in the same year the crofters in Skye withheld their rents and local rates to such an extent as to bring the parochial machinery of the island to a deadlock. There was a general outbreak over the island, and a couple of months were occupied by the authorities in restoring order, which had to be done by a strong force of police drafted from most of the Highland counties, with the assistance of a body of marines and two gunboats. Again, in the winter of 1887-88, a serious outbreak took place in the Island of Lewis, beginning among the inhabitants of the parish of Lochs, who organised what became known as the famous deer raid. This outbreak extended to other parts of the island, and culminated in a very serious riot on the farm of Aignish, where a body of about 2000 crofters came into direct conflict with the military. Simultaneously there was an outbreak of a minor character at Clashmore, in Assynt, but since that time the Highland districts have been quiet, except for one or two sporadic outbreaks in remote quarters.

The Commission appointed under the Crofters' Act, and of which Sheriff Brand is chairman, began operations towards the latter part of 1886, and since then they have practically considered and adjudicated fair rents all over the Highlands. The reductions of rent have averaged about 30 per cent., a figure which, it may be noted, is not more than has been given by

FISHERIES.

proprietors to the tenants of large sheep farms. The Commissioners, under their powers for dealing with arrears of rent, have cancelled about 80 per cent., the amount which has been usually standing against the small tenants being on the average three years' rent. The Commissioners had certain powers under the Act for dealing with extension of holdings, but very little has been done under these clauses, the advocates of the crofters maintaining that they are practically inoperative. About 1884 a body which is now styled the Highland Land League was originated, and it has made itself particularly active in recent years in demanding greater powers for the enlargement of holdings. After the extension of the franchise it secured control of the parliamentary representation of the crofter counties, and owing to the pressure which it was able to bring to bear on the Government, Mr Gladstone in 1892 appointed a Royal Commission, popularly known as the Deer Forests Commission, of which Sheriff Brand was also chairman. They visited most of the large deer forests and sheep-farming areas in the Highlands, and took evidence under a remit as to whether any, and if so what, land at present used for grazing or sporting purposes is capable of being profitably or advantageously occupied by crofters or other small tenants. Their report was presented to Parliament in April, 1895. It deals with all the seven crofter counties, and schedules lands extending to 1,782,785 acres. Of this vast area 794,750 acres are set apart for new holdings; 439,188 acres for the extension of existing holdings; and 543,847 acres for moderately-sized farms. In Argyllshire 378,813 acres are scheduled; in Inverness-shire, 549,598 acres; in Ross and Cromarty, 323,233 acres; in Sutherland, 395,898 acres; in Caithness, 86,410 acres; in Orkney, 12,985 acres; and in Shetland, 40,848 acres. The scheduled area in grazing farms is much larger than in deer forests. Of the total of 1,782,785 acres, upwards of 61,000 acres are old arable land—that is, land from which the people have been cleared. It remains to be seen in what way Parliament will endeavour to give practical effect to the report of the Commission.

When Secretary for Scotland, the Marquis of Lothian made an official tour of the Highlands, the result of

which was the appointment in 1890 of a Commission under Mr Spencer Walpole to deal with the question of the possibility of fostering the fishing industry in the West Highlands by means of improved piers and harbours. Another Commission, with the same object, was appointed the following year, to inspect sundry proposed new railway routes in the north-west, and they made certain recommendations. Following upon these inquiries, considerable grants were made for piers and harbours on the west coast, particularly in the Lews, and the Government have promised a guarantee for the extension of the West Highland Railway to Mallaig, so as to increase the facilities for the transmission of fish to the southern markets.

In connection with the Highland land question, it may be mentioned that within the last twenty years something approaching a revolution has taken place in the position of the large sheep farmer in the north. He at first found himself brought into competition with the immense supplies of fine wool which were imported from the Colonies, especially from Australia, and more recently another element has been added by the large importations of fresh mutton from abroad. Farmers found that they were unable to continue to pay the high rents which in the early days of the sheep-growing industry they were quite able to meet, and as leases ran out there was an extreme unwillingness on their part to take their farms except at a very great reduction of the old rents. Another cause of the depression is due to the deterioration of Highland grazings, which will not nearly carry the same number of sheep as formerly. In some cases within the past half-dozen years, farms in Skye have been let at a reduction of something like 40 to 50 per cent. This has undoubtedly led to the tendency which has been recently shown by the proprietors, when these great farms became vacant, to meet the demand on the part of rich sporting tenants in the south, and in consequence immense areas that were formerly under sheep have been gradually turned into deer forests. The outcry which arose in some districts against this extensive and continuous afforestation gave strength to the representations that were made to the Government to consider whether these lands should not be made available for small tenants.

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By JAMES G. BERTRAM.

WHEN it is stated that fish of the value of more than £3,000,000 are annually captured in what may be termed the seas and rivers of Scotland, or are obtained by boats and crews sailing from Scottish ports to other waters, the great importance of the Scottish fisheries at once becomes apparent, not only because of its vast contribution to the national commissariat, but also because of the money expended in the construction of harbours, the building of boats, the manufacture of sail-cloth, the weaving of nets, the making of barrels, and the transmission of the fish caught to the various centres of consumption. Scotland from an early period in its history has made its mark on the waters, and has during late years been foremost in its endeavours to secure a large share of the 'harvest of the sea.'

The Herring Fishery.—The chief food-yielding fishes are plentifully found off the Scottish coasts, on many points of which important fishery centres have long

been established; but the particular fish which from time immemorial has been most eagerly sought for and most plentifully found in Scottish water is the herring—the capture of which throughout Scotland has during many years been a well-organised industry, and is at present yielding a sum of over £2,000,000 sterling per annum to Scottish fishermen.

Although the natural history of the herring has at all times attracted attention, it is only within the last few years that definite knowledge has been obtained of its growth and habits. It is a fish which breeds and lives in our immediate seas in vast numbers, the herrings of different localities being easily distinguishable from each other. Pennant's story of the annual migration of the herring to and from the Arctic seas has long since been proved a myth, founded probably on the speculations of ignorant fishermen. The herring is not migratory further than that it approaches the land in search of suitable spawning ground, and it is then that

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it becomes the prey of the fishermen. It is very prolific, the female yielding from 25,000 to 35,000 roe or eggs, so that Buffon observed that if one pair were suffered to breed and multiply for a period of twenty years without interruption their progeny would in that time bulk as large as the globe itself.

From official statistics annually collected by the Scottish Fishery Board since 1st June, 1809, we are able to ascertain with some precision the quantities of herring which are annually cured or salted. For the season ending on 5th April, 1810, the number of barrels entered as cured was 90,185 $\frac{1}{2}$, of which 35,848 were exported to Ireland and to places out of Europe. No note was apparently taken of the number of barrels exported to the Continent in 1810 and 1811, but since then the figures have been regularly published. The export of cured herrings to the Continent has increased from 4730 barrels for the year ending 5th April, 1812, to 960,868 barrels in the year ending 31st December, 1892. The following tables show the growth of the herring fishery in Scotland during the nineteenth century, the statistics for every tenth year being selected for that purpose:—

Year ending	Barrels cured.	Barrels exported.
5th April, 1812, . . .	111,519 $\frac{1}{2}$. . .	62,820
" 1822, . . .	316,524 $\frac{1}{2}$. . .	214,956
" 1832, . . .	362,660 $\frac{1}{2}$. . .	217,499 $\frac{3}{4}$
" 1842, . . .	667,245 $\frac{1}{2}$. . .	284,736
5th Jan., 1852, . . .	594,081 . . .	264,204
31st Dec., 1862, . . .	830,904 . . .	494,910
" 1872, . . .	773,859 $\frac{1}{2}$. . .	549,631
" 1882, . . .	1,282,973 $\frac{1}{2}$. . .	825,982 $\frac{3}{4}$
" 1892, . . .	1,157,942 . . .	960,868

The following are the places to which herrings caught and cured in Scotland are exported in the greatest numbers:—Libau, Königsberg, Danzig, Stettin, and Hamburg.

The total number of barrels of herring cured in Scotland during the ten years ending in 1893 has been as follows:—

	Barrels.		Barrels.
1884, . . .	1,697,077 $\frac{1}{2}$	1889, . . .	1,397,507
1885, . . .	1,572,952 $\frac{1}{2}$	1890, . . .	1,304,603
1886, . . .	1,312,223 $\frac{1}{2}$	1891, . . .	1,126,072
1887, . . .	1,303,424 $\frac{1}{2}$	1892, . . .	1,257,942
1888, . . .	1,118,872 $\frac{1}{2}$	1893, . . .	1,409,588 $\frac{1}{2}$

Most of the herrings cured in Scotland are exported to the Continent, the total number of barrels exported in 1892 having been—to Ireland 28,116, to the Continent 909,681, and to places out of Europe 23,071 $\frac{1}{2}$; and in 1893, to Ireland 33,431, to the Continent 987,073, and to places out of Europe 24,682 $\frac{1}{2}$.

No official figures denoting the quantities of herrings sold *fresh* were formerly collected, but in 1833 an attempt was for the first time made to ascertain the extent of trade carried on in this branch of the herring fishery. The statistics have been taken at each of the twenty-seven fishery districts (a list of which is given on next page) superintended by officers of the Scottish Fishery Board. The sale of fresh herrings as taken from the water is stated to have been 747,927 cwt., value £224,378, in 1891; 686,959 $\frac{1}{2}$ cwt., value £176,792, in 1892; and 1,062,231 cwt., value £210,540, in 1893. The cured herrings of 1893 amounted to 1,409,538 barrels, valued at £1,085,045, giving a total value of herrings cured and uncured of £1,295,585 in that year.

The 'curer' has always been more or less the moving spirit of the herring fishery in Scotland, and is so still, although commerce in salted herrings is evidently on the eve of a change, in consequence, probably, of the

growing demand for the newly-caught fish, which are now more easily conveyed to towns and cities than was the case sixty years ago. The curer contracts with the owners of boats to fish for him at one or other of his curing places, if he possess more than one; he usually stipulates that the owner of the vessel shall supply him with 200 crans of fish. He also, in some instances, provides the boat with several requisites of the fishery, as, for instance, dye stuff for the nets, probably also the nets as well. He likewise often provides ground upon which the nets may be hung up to dry at each return from the fishery. Until recently the price to be paid for the fish was almost universally fixed long beforehand at so much per cran, but as this was found to be a very speculative arrangement it has lately been to a great extent superseded by the practice of selling catches by auction daily. By this system the curer is enabled to pay a price consistent with what he thinks he may expect to receive for his fish, fresh or cured, and the remuneration of the fishers is regulated by the market value of their takes. Under this system boat-owners do not require to contract with any particular curer, considering that they get a better return for their labour by taking the risks of the market.

The entire fabric of herring commerce as at present conducted rests on the shoulders of the curer. He engages a staff of coopers to make his barrels; he imports his barrel wood and provides his salt; he engages and pays a large number of herring-gutters and packers; he obtains the 'brand' for his fish and enters into relations with the 'buyers,' some of whom come from great distances to purchase at the Scottish curing ports; and after all his calculations and never-ceasing industry he has no certainty of making a profit. One of many circumstances may occur to mar his efforts. The season's fishery may prove a failure and his outlays in bounties may thus be unprofitable; his barrels and salt may be left in his hands; or it may prove too productive, so that markets become glutted and prices fall below the point of remuneration. Taken throughout, the venture partakes greatly of the character of a lottery as well to the curer as the fishermen.

The Scottish fishermen are mostly hereditary 'toilers of the sea,' some families having followed the calling through many generations. Many of the boats are 'concerns' owned by several relatives, all of whom share in the venture; in other instances the boat belongs entirely to one person, who may act himself as skipper, hiring as many 'hands' to assist him as he may require, paying them either by share or at a rate agreed on. The 'craft' engaged in this branch of the Scottish fisheries have of late years been enlarged and improved. Formerly open boats were the rule, and a number of these are still used; but the new vessels are generally of a larger build, most of them decked or half-decked. The boats of the period, with all necessary fittings, cost from £150 to £300, whilst a large sum of money requires to be expended in providing nets, which cost about £3 each. The larger vessels have proved most successful, the superiority of big boats over small ones having been demonstrated day by day. There is, however, one drawback to these larger vessels: many of the harbours cannot take them in, and when becalmed are too heavy to be propelled by oars, so that there is great danger of herrings not reaching the port in time to be cured. In such cases steam tugs are sent out by the curer to aid his boats, and the time is not distant, probably, when steam-driven boats will become a feature of the herring fishery.

The herring, it may be said, can only be captured when it comes in search of its captors. In other words, the shoals are only accessible to man at those periods when the fish assemble in countless numbers to spawn;

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and it is a feature of the fishery that the official 'brand' or mark of quality is only allotted to 'full' fish—that is, those herrings which are full of their spawning material, although at that time the food qualities of the fish are at their poorest, all the fat-forming products having been drained away to aid in the development of the milt and roe. The herring fishery in Scotland is chiefly a shore fishery, the boats putting off to sea in the afternoon, and returning with their cargoes of fish as early next day as possible, so that the cure of the herrings may at once be proceeded with. Some vessels have always, however, carried on the cure on board in the Dutch style, and others have recently been fitted out to carry on fishing in a similar fashion. The mode of catching the herring common to the fisher-folks of Scotland is known as drift-net fishing. A series of nets are joined together on a long rope, each net being marked by a floating bladder, and the united fabrics are let down into the water, into which they are sunk by a leaden weight. Thus the nets stand, so to speak, across the path of the fish like a great perforated wall; and the herrings, should they strike against it, are enmeshed by their gills. When all the nets carried by a boat have been placed in the water, the men go to rest for a few hours, and leave the nets to drift with the tide, in the hope that when it is time to pull them on board they will be filled with fish. Herring fishing, while it lasts, is a laborious occupation, as on some evenings the nets have to be shot more than once. There is another mode of fishing for herrings in Scotland which is chiefly practised in Loch Fyne; locally it is known as 'trawling,' but in reality it is 'seining'—a plan of capture which is peculiar to pilchard fishing off the coast of Cornwall. By it the fish are surrounded with nets, and landed at leisure.

The following is a list of the Scottish fishery districts, as arranged by the Fishery Board:—

Aberdeen.	Findhorn.	Lybster.
Anstruther.	Fort William.	Montrose.
Ballantrae.	Fraserburgh.	Orkney.
Banff.	Greenock.	Peterhead.
Barra.	Helmsdale.	Rothsay.
Buckie.	Inveraray.	Shetland.
Campbeltown.	Leith.	Stonehaven.
Cromarty.	Lochbroom.	Stornoway.
Eymouth.	Lochcarron & Skye	Wick.

The herring fishery, however, is carried on from many places other than the above-named towns—wherever a curer may set up business, or at any little port which is near a railway station. Wick was at one time the Scottish headquarters of the fishery, but of late years Fraserburgh and Peterhead have become important centres, the aggregate number of boats fishing from the three Aberdeenshire districts of Aberdeen, Fraserburgh, and Peterhead during the season of 1893 being 1727. It was calculated by the late Right Hon. R. W. Duff, Esq., that the herrings taken every year off the Aberdeenshire coast are of greater value than the annual rental of that county. A very great number of herrings are now obtained at Shetland. In 1874 the inspector wrote of the Shetland herring fishery that it had become so small in mark as scarcely to call for notice, and during that year the fishing throughout the Shetland Islands yielded only a total of 1100 barrels, or 3850 cwt.; but in 1893 the catch of herrings for Shetland had increased to 334,918 cwt., valued at £69,013, or nearly a tenth of all the herrings (3,493,264 cwt.) taken on the East coast of Scotland, including Orkney and Shetland. In 1892 the five herring fishery districts which produced the largest number of barrels of herring cured on shore were Fraserburgh, 387,101; Peterhead, 279,323; Aberdeen, 153,287; Wick, 94,616; and Shetland, 91,532.

The number of barrels cured on board vessels fitted out for the purpose, wholly on the West coast, was 42,462. As regards the number of boats taking part in the herring fishery of Scotland, it cannot be given with accuracy; but the fishery officers during a selected week for each district count the vessels at work, and in that week in 1893 it was found that 6657 were engaged. On some evenings a very small number only of the fleet venture to sea, and it is only on rare occasions that the total number of vessels taking part in the fishery in any one year is to be found at work. The netting employed in the capture of the herring has of late been largely extended, and is now made of finer materials than forty or fifty years ago. From an official report on the herring fisheries of Scotland, published in 1878, we ascertain that 'Twenty years ago a boat carried 24 nets made of hemp, each net 40 yards long, with 28 or 29 meshes to the yard, 10 to 12 score meshes deep, and weighing 25 lbs. Each boat carries now 50 to 60 nets made of cotton, each net 60 yards long, with 35 meshes to the yard, 18 score meshes deep, and weighing 12 to 14 lbs. A boat, in other words, used to carry 960 yards of netting; it now carries 3300 yards. The nets used to be about 6 or 7 yards deep; they are now about 10 yards. They used to present a catching surface of 3000 square yards; they now present a catching surface of 33,000 square yards. The 6000 square yards of hemp netting used to weigh about 600 lbs.; the 33,000 square yards of netting now weigh little more than 600 lbs. Without increasing the weight of nets to be worked, each boat has increased its catching power fivefold. There are more than 7000 boats in Scotland fishing for herrings. These boats must, in the aggregate, have nets 23,000,000 yards long, and certainly, in the aggregate, 230,000,000 square yards of netting. The Scotch herring nets would, in other words, reach in a continuous line for nearly 12,000 miles, and cover a superficial area of 70 square miles; they would go more than three times across the Atlantic from Liverpool to New York.' In 1892, however, the area of netting used for all descriptions of fishing by 13,635 boats was only 169,862,038 square yards, and in 1893 the number of fishing boats (propelled by sails or oars) was reduced to 13,272, and the area of netting to 162,666,717 square yards.

The 'brand' or mark which denotes, on the authority of the Fishery Board, the various qualities of the herring cured, was never at any time compulsory, but its being conferred at all gave rise to so much discussion in Parliament and in other places that a compromise was effected; and since the year 1859 a fee of fourpence per barrel has been charged on all herrings distinguished as cured to the satisfaction of the board. The revenue resulting from the brand is considerable, showing that the brand is greatly valued as a certificate of quality. The number of barrels so certified in the year 1891 was 256,318, yielding £4271, 19s. 4d. in fees; in 1892 the number of barrels was 261,125½, yielding £6018, 15s. 2d.; and in 1893 the number was 441,255½ barrels, yielding £7354, 5s. 2d. in fees.

Besides the fishermen who capture the herrings, a numerous body of persons is required to carry on the business of curing, which, as has been indicated, requires to be effected with great celerity. In 1893, besides 1164 persons employed as curers, there were 51,690 employed as coopers, gutters, and packers.

The herring fishery in Scotland was originally of slow growth, and no date can be fixed upon to indicate its origin; but that the herring was in Scotland an article of commerce at a very early date is proved by David I.'s Charter to the Abbey of Holyrood (1138), in which leave is given to fish for herrings at Renfrew on the Clyde. In the year 1240, herrings are mentioned in

the Parliamentary Records of Scotland in connection with the burgh tallies. The Scotch, says Mitchell in his *History of the Herring*, seem at a very early period (1410) to have asserted their claims to the exclusive rights of fishing on their own coasts; by the year 1424 herrings were regularly salted and barrelled in Scotland as well as smoked. Five years later, we are told, the fishing was carried on to a large extent, and that Scottish fishermen caught great quantities at the mouths of the Dee, Tay, Forth, Tweed, etc., which they principally sold to the Dutch and other foreigners. In the reigns of James III., IV., V., and VI., various laws were enacted for the regulation of the herring fishery, some of which were rather objectionable. The aid of Parliament, from those times to the present day, has often been extended to the herring fisheries, which were at one time encouraged by bounties. These, however, have long since been abolished, the only remnant of governmental aid which now exists being the 'brand.' It may be said of the Scottish herring fishery that it prospers best when those engaged in it are undisturbed by vexatious rules and regulations.

The Sprat Harvest, which may be held to be a branch of the herring fishery, would prove very remunerative to the Scottish fishermen if they were able to get their takes conveyed to market at a reasonable rate of carriage, but in consequence of the heavy charges of the railway companies, it has not been found profitable to send these toothsome fish to distant seats of population, where they would be gladly welcomed as a palatable addition to the commissariat. The taking of sprats in Scotland used to be largely carried on in the Firths of Forth and Tay and in the Beaully Firth at Inverness. In 1893 the gross catch is stated to have reached 58,319 cwt., valued at £4394, of which 46,400 cwt. were got in the Moray Firth. The sprat fishing was almost entirely confined to the east coast of Scotland, and a large proportion of the catch was used for manure, the average price being only 1s. 6d. per cwt.

Scottish Mackerel Fishing.—In the twelfth annual report of the Fishery Board for Scotland, it is stated that there are reasons for believing that a considerable trade in Scotch cured mackerel might be established with the United States, and that shoals of fine mackerel exist to the west of the Hebrides, although in 1893 only 2900 cwt. (value £2244) were captured, mostly by accident in the herring nets. During recent years the mackerel fisheries in Norway and Ireland have been much extended in consequence of the growing demand for the cured fish in the markets of the United States, as from the continued failure in the American fishery large quantities are now imported, amounting to over 70,000 barrels in 1893. Some experiments made by the Fishery Board west of Barra showed that the mackerel there were of superior quality, and ranged from 14 to 18 inches in length, 228 to 236 of the cured fish filling a barrel. In a report by Her Majesty's Consul-General at New York, it was stated that the consignments of mackerel which have reached the American market from Scotland had, with few exceptions, been the finest received from any part of Great Britain, though he remarks that the Norwegian are considered of the first quality and command the highest prices. The care and skill employed in pickling the fish he considers to be of the utmost importance, and as the curing of herring has been carried on with success in Scotland, there seems no reason why an equal reputation should not be earned by Scotch-cured mackerel.

The Cod, Ling, and Haddock Fishery.—In addition to the herring and the sprat, the chief fishes captured in Scotland belong to the cod and turbot families—the *Gadidae* and *Pleuronectidae*. These yield some of their

members in positively enormous numbers, the haddock in particular being annually captured in millions, whilst the whiting is also a most abundant fish. The cod and its congeners—the ling, tusk, and hake—are also plentifully caught; whilst the toothsome 'flukes' reach the frying-pans of the people in countless numbers—the turbot and sole being taken also on many parts of the coast. No formal organisation exists in Scotland for carrying on the white-fish fisheries. As has been indicated, the herring fishery occupies the larger portion of the time of the Scottish fishermen, a very great number of the fishing population preferring to devote the largest share of their attention to that particular fish, following the different shoals in their season, many of them fishing both in Irish and English waters. In the winter time, when some of the most coveted table fishes are in their best condition for food, the herring-boats at many of the Scottish fishing ports are laid up (there is, however, at several places a winter herring fishery), and the line-fishing boats are brought into use. Bait being obtained, the voyaging in search of cod and haddock is commenced. It is a laborious occupation; the first baiting of the lines is, however, usually accomplished by the women before the boat leaves port. At one period the family of the fishermen used to collect mussels for bait on the immediate shore where these molluscs were plentiful; but these local supplies have long since become exhausted, in consequence of the great quantities used, and now mussels have to be purchased from private beds at a considerable expenditure, the men having to proceed on many occasions to distant places in order to obtain the necessary supply, or otherwise have them brought by railway, which is somewhat costly, the rates of carriage being heavy. As indicative of the quantities of bait required in line-fishing, it may be stated that on the Berwickshire coast as many as 12,000,000 limpets are annually used for bait when such a number can be obtained. For the winter haddock fishery carried on from the port of Eyemouth, from 700 to 1000 tons of mussels are required, and these have to be brought from Lincolnshire and largely from Holland. In a period extending over nine months haddocks of the value of £13,000 were taken by the Eyemouth boats, and the cost of the bait used was £1800. A very considerable portion of the haddocks brought to Eyemouth are cured for distant markets, where they find a ready sale, although it can scarcely be said that they are in the same favour as the 'Finnan Haddies' of the Aberdeenshire and Banffshire coasts. At Newhaven, too, on the Firth of Forth, the number of mussels required for the deep-sea boats is at the rate of 3,500,000 per annum.

In all probability fishing by means of the beam trawl-net will ultimately supersede line-fishing, which at present contributes the bulk of 'round fish' captured in Scotland, the quantities in 1893 being 1,136,389 cwt. (value £466,399) caught by lines, and 309,862 cwt. (value £178,304) caught by trawl-net. Already there is a small fleet of steam trawlers working from off the coast of Fife to the coast of Caithness, and landing their catches of fish at various of the Scottish fishing ports, chiefly Aberdeen, Ayr, Berwick, Eyemouth, Granton, Montrose, Newhaven, Stranraer, and Wick. The fish taken are of the same kinds as are caught by the line fishermen, with the addition of some that, as a rule, can only be captured by means of the beam trawl-net, which is made in the shape of an immense purse or pocket, many feet in length, and with a huge gaping mouth that affords ready entrance to the fish. In 1883 the total number of Scottish beam trawlers was 47, with an aggregate tonnage of 2004; while in 1893 it was 142, of which 72 were

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steamers of 2625 total tonnage, employing 544 men, and 70 were sailing vessels of 423 total tonnage, employing 176 men. In addition there were 39 steam trawlers other than Scottish, of 959 total tonnage, and employing 296 men fishing in Scottish waters, and landing their takes mostly at Aberdeen. From time to time various Commissions have been appointed to inquire as to whether beam trawling is injurious to the supply of fish, and as a result an Act was passed in 1889 prohibiting fishing by this means within the Scottish territorial waters, and also certain bays and firths which extend beyond the 3-mile limit, such as the Firth of Clyde and the Moray Firth. These measures cannot yet be said to have had the results anticipated, as statistics show a continued falling off in the supply of food fishes, and even within the protected waters a general diminution of their average abundance has been found in the investigations carried out for the Fishery Board. In a report by Professor M'Intosh, St Andrew's Marine Laboratory (issued in 1894) on trawling and its effects, it is stated that the closure of the inshore waters, while it places the trawl fishermen at a disadvantage, benefits the line fishermen, and does not deprive the public altogether of the supply of flat fishes from the inclosed area. It does not, however, produce many large flat fishes, for as these get older they appear to seek the deeper waters outside the limit, either from a natural habit or as the result of constant interference by man. The vessels employed in trawling have gradually increased in tonnage since 1884, as they now proceed to much greater distances—the main supply of trawled fishes now coming from the Great Fisher Bank, 200 miles distant, or from Iceland, while Aberdeen trawlers sometimes visit the Dogger Bank. A large supply of ice is now taken in such vessels to preserve their catch until they can reach the markets, and special factories have been erected at Aberdeen for the manufacture of this ice by the ammonia process. The total quantity of fish landed by the trawlers in 1893 was 425,687½ cwt., and the value £278,315, while the quantity landed by line-fishermen was 1,292,626½ cwt., and the value £531,156. While the total number of men employed on the trawlers was only 1016, the line-fishermen numbered 43,866, a decrease of 1689 as compared with 1862. The men employed in trawling had, however, also decreased by 50. In a report on the Scottish Herring Fisheries, a calculation was given of the number of cod, ling, and hake supposed to inhabit the seas around Scotland and its islands. The estimate was 70,000,000, and of these it was thought that 3,500,000 would be caught for food purposes—a number, however, representing only the cured fish. As has been indicated, the line fishers nearly all fish, as it is called, on 'their own hook.' A few, however, capture by agreement with dealers; and others fish on the chance of a prompt sale on arriving in port, where buyers are always in waiting ready to bid and send off the produce to the large seats of consumption. The old Scottish system of 'creel-hawking' by the women of the fishermen up and down the country and in Edinburgh, is now greatly out of fashion.

Statistics of the cod, ling, and hake captured and cured in Scotland under the supervision of the officers of the Fishery Board, are given in the annual report, from which we find that the number cured in 1893 was 3,960,734, nearly one half of them (1,860,304) being caught off the Shetland Isles. The weight of the fish cured dry was 141,725½ cwt., whilst 3458 barrels were cured in pickle. Of the total lot cured, 58,653½ cwt. cured dry were exported to Ireland. In addition to the quantities of these fish which were captured to be cured, statistics are given in the Fishery

Report of the quantities caught for the daily markets, viz., 335,519½ cwt. of cod and 59,299½ cwt. of ling, the united value of these being £129,098. The total money value of the produce of the white-fish fisheries of Scotland to the fishermen in 1893 amounted to £936,267, but to the consumers the sum charged would probably be three times that amount. In 1893 the number of fishing boats in Scotland was 13,491, and their tonnage 118,327; of fishermen and boys, 45,141; and the estimated value of boats, nets, lines, and other fishing materials used in the herring and cod and ling fisheries amounted to £1,785,365, of which sum £53,879 belonged to steam fishing vessels, £1,382,721 or 80 per cent. were invested in boats propelled by oars or sails, £252,815 in trawlers belonging to Scotland, and £95,950 in those of other nationality.

In 1893 a hatchery for the artificial propagation of the food fishes, such as soles, turbot, and plaice, capable of producing in the course of the year over 100,000,000 of their fry, was completed at Dunbar. Establishments of a similar nature have been in operation for many years in Norway, Canada, and the United States.

The Shell-fish Fisheries of Scotland.—The value of the Scottish shell-fish gathered in 1893 has been estimated at the sum of £75,354, which is distributed as follows:—Lobsters, £30,536; crabs, £15,369; mussels, £13,342; oysters and other kinds of shell-fish, £16,107. The supplies of that favourite, the oyster, have greatly fallen off, in consequence of the persistent over-dredging which at one time took place on the Firth of Forth scalps, when many hogsheds of immature oysters were sold to fatteners and other traders in Holland and Belgium, as well as to the owners of private oyster-beds in England. The quantity of oysters taken in 1893 was only 3157 hundred (value £1481)—a very small number, we are led to believe, as compared with the quantities sold in former years, when the produce of the Firth of Forth oyster-beds (they are all natural scalps of great extent) would probably amount to six times that sum, although prices would not thirty-five years ago be a third of what they are to-day. Shell-fish—oysters excepted—are found on nearly every part of the Scottish coast, and in 1893 the largest quantities of mussels and other shell-fish were obtained from the Leith, Anstruther, Montrose, and Greenock districts. There are mussel-beds in the Clyde and at Montrose which are private property. Enormous quantities of periwinkles are gathered at many places on the Scottish shores in order to be forwarded to London and other large seats of population. Cockles are also collected and sold in considerable quantities throughout Scotland; but it may be said with truth that shell-fish of every kind, so far as they are free to the people, are annually becoming less plentiful. A pond for artificially hatching lobster eggs is now in operation at Brodick.

The Scottish Salmon Fisheries.—The salmon once, it is said, was so plentiful in Scotland that farm servants bargained not to be forced to eat it more than twice a week; but such statements must be taken only for what they are worth, and salmon are probably just as plentiful in Scotland to-day as they ever were—so far, at any rate, as the yield of the fisheries is concerned. The rivers are now watched with greater care than they were in the olden time, and although poaching prevails on the Tweed and some other streams to an extent which is not generally known, the number of fish of the salmon kind which are captured during the season in each year is probably greater, on the average, than it was fifty or sixty years ago. The value of the salmon captured is not stated by the

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Scottish Fishery Board, but the annexed table gives | 1891-92, distinguishing between those inside and out-
the assessed rental of the Scottish salmon fisheries for | side the estuary lines.

Division.	Inside the Estuary Lines.		Outside the Estuary Lines		Total.		Area of catchment basins in square miles.	Length in miles of seaboard.
	1891.	1892.	1891.	1892.	1891.	1892.		
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
Tweed Basin,	6,543 10 0	6,523 10 0	790 0 0	790 0 0	7,333 10 0	7,313 10 0	...	...
South-Eastern Division, .	30,159 18 8	33,279 8 3	16,975 12 1	17,384 0 7	47,135 10 9	51,263 8 10	6543	150
North-Eastern Division, .	21,372 4 0	22,064 4 0	11,493 7 0	11,458 7 0	33,365 11 0	33,522 11 0	6277	280
Western Division, . . .	3,303 15 0	5,303 1 5	3,883 2 8	3,493 2 6	11,586 17 6	11,796 8 11	3158	350
South-Western Division, .	5,593 1 0	5,592 1 0	1,486 8 0	1,514 8 0	7,079 9 0	7,106 9 0	2777	200
	72,372 8 8	75,762 4 8	34,128 9 7	35,239 18 1	106,500 18 8	111,002 2 9		

The relative productiveness of the fishery during recent years may be estimated from the following statement of the number of boxes of Scottish salmon sent to | Billingsgate market, and the average price per pound realised during the years 1884-93 from February to September.

Month.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	Average of 10 years.	Average Monthly Price p. lb. during 1893.
												s. d.
February,	1,385	879	841	717	535	691	612	934	1,078	557	818	1 7
March,	1,402	1,116	1,008	797	899	1,006	902	1,116	1,688	773	1,071	1 9
April,	1,973	1,886	1,744	1,466	1,096	1,152	952	1,403	1,657	845	1,416	1 8
May,	3,162	2,257	2,485	2,432	2,603	1,859	1,844	2,591	2,125	1,997	2,335	1 5
June,	3,621	3,863	2,896	3,531	3,953	3,627	3,127	4,140	2,438	3,802	3,540	1 1
July,	8,765	10,532	8,045	9,544	7,943	7,414	7,148	8,007	6,259	5,736	7,949	0 11
August,	6,070	9,151	5,777	7,794	5,474	4,826	4,035	7,023	6,064	4,722	6,694	1 1
September,	691	628	611	636	356	326	311	670	610	421	526	1 3
Total,	27,219	30,362	23,407	26,907	22,859	21,101	18,931	25,889	21,919	18,903	23,749	

Taking the weight at 1 cwt. per box this would give a total weight of 1187 tons 9 cwt., sent to Billingsgate in 1893. Besides the fish thus exported, the consumption of salmon has largely increased throughout Scotland of late years, and in seasons when it is plentiful and consequently cheap, an immense number are sold. In Glasgow on some days of July over 300 salmon and grilse are exposed for sale. The Acts of 1862 and 1868 which regulate the salmon fisheries of Scotland, however good in some respects, have not proved successful in checking the pollution of rivers, nor in providing a free passage for the fish at all times from the sea to the headwaters of the rivers. Further legislation is also required for the better protection of fish during close time.

The number of boxes sent through the railways from the Scottish fishery districts is not reported annually, but in the year 1892 it was stated as follows:—

District extending from	Boxes.	Half Boxes.
Berwickshire to Rattray Head, .	16,779	370
Rattray Head to Cape Wrath, .	9,569	164
Cape Wrath to Glasgow, . . .	3,821	—
Glasgow to the Borders,	4,882	—
	35,001	534

The above does not include salmon consumed in the district where caught, nor single fish sent by rail, but it gives an approximation to the take of that year, in which nearly 22,000 boxes were sent to London.

Every river in Scotland contains, or might contain, 'fish of the salmon kind.' The chief salmon-yielding streams are the Tay, the Tweed, the Spey, the Don, and the Dee, all with very productive net fisheries. The rental of the Tay, which may be held to be the

'representative,' as it is the most valuable salmon river in Scotland, has been as follows during the nine years ending in 1893:—

1885,	£20,417	1890,	£17,819
1886,	22,542	1891,	17,237
1887,	22,143	1892,	19,013
1888,	19,655	1893,	21,762
1889,	17,731		

The chief commercial fisheries of the Tay are situated below the Bridge of Perth, mostly near Newburgh in the throat of the river; these are worked by means of net and coble by the lessees of the various fishing stations. A large number of persons are employed in working the different 'shots,' as the places are called where the netting of the water takes place, and a very considerable sum in wages is thereby earned on the Tay and other salmon streams. The times for fishing are regulated by Act of Parliament, angling being permitted on most rivers after net-fishing has ceased for the season. As a fact of fishery economy, it may be stated that, to admit of a rent of £20,000 per annum, fish to the value of £60,000 would require to be taken in order to meet the payment of wages and the wear and tear of the fishing gear employed, as well as to ensure the necessary profit to the lessees of the various fisheries, which in the case of the Tay belong to many different proprietors. Those gentlemen who own the 'upper waters,' and who afford the fish their breeding grounds, do not share in the proceeds of the commercial fisheries, but have to content themselves with an occasional day's sport with the rod. Various estimates have been made from time to time of the number of fish which ought to be captured in the Tay in any one season; these range from 75,000 to 100,000 salmon and grilse. For a period of over a quarter of a century the river Tay was fed with young fish from the Stormontfield salmon nurseries. These fry—par and smolts—are reared on the 'piscicultural system'—the eggs of the female being exuded

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from the gravid salmon by pressure, and impregnated by the milt of the male fish. The fructified ova are then laid down in boxes filled with gravel, and over which a stream of water is caused to percolate. In the course of from three to four months the eggs are hatched, and twelve months later half of the number are ready to place in the Tay, the other half of the hatching, curiously enough, not being ready to migrate from the nursery till another year has elapsed. The Stormont-field hatchery has now been superseded by one erected on the Earn, near Dupplin. Numerous salmon hatcheries are now in existence throughout Scotland. On the river Dee there is one, erected in 1893 at Ardeer by the Dee Board, capable of hatching nearly 1,000,000 fish annually; and one at Aberdeen, belonging to the Dee and Don Boards, capable of hatching 12,000 to 20,000. On the Spey, near Fochabers, the Duke of Gordon and Richmond has erected one in which nearly 500,000 fish can be hatched; on the river Conan the District Board has erected one capable of hatching 200,000; at the lower end of Loch Brora, in Sutherland, there is one capable of hatching 150,000; and one at Inchnadampf, Assynt, and another at Seisgill, Scurie, each capable of hatching 50,000. There is also a private hatchery on the Dee, Kirkcudbrightshire, of a similar capacity, and Mr J. J. Armitstead's Solway Hatchery at New Abbey.

Great mortality has taken place in almost all the Scottish salmon streams during recent years, in con-

sequence of the fish being attacked by a fungoid growth (*Saprolegnia ferax*), for the cure of which no remedy has yet been discovered. It is somewhat remarkable, as has been pointed out by Professor Huxley, that despite the enormous numbers of salmon and grilse that have fallen a sacrifice to the epidemic, the supply of these fish has not sensibly decreased.

Sporting Fisheries.—In addition to the 'angling waters' on the river Tay and other salmon rivers, there are a large number of lochs and streams in every county of Scotland on which the sport of rod-fishing may be pursued. Many of them are free to all who choose to fish; others are open to those persons who desire to enjoy their pastime more privately, on payment of a given fee for the use of boats and boatmen; and in this category we may place Loch Tay for salmon, Loch Leven for trout. The rental derived from what may be described as the 'inland fisheries' of Scotland is not, we believe, less than £100,000 per annum. In connection with this branch of the Scottish fisheries, we may mention that at Howietoun, near Stirling, a large piscicultural establishment has been opened for the supply of the impregnated eggs of trout and salmon; also for the sale of 'fry' and fish of all ages. This 'fishery' has proved a great success, and has given an impetus to the study of pisciculture in Scotland which will probably result in the restocking of over-fished rivers and lochs, and in the establishment of new fish ponds.

DEER FORESTS AND GROUSE MOORS.

By JAMES G. BERTRAM.

Of the 19,777,490 acres of land and water which constitute the area of Scotland—and of which only 4,811,813 acres are arable—about 2,000,000 are denized by the red deer and roe and some other wild animals. How much additional ground is occupied by grouse, which are found in every county of Scotland, we are unable to determine, but in all likelihood the area occupied by these and other wild birds is not less than that given over to the stag and roebuck. Deer-stalking and grouse-shooting are *par excellence* the sports of Scotland, and annually attract to the 'land of the mountain and the flood' a large body of persons in search of recreation, and willing to pay for it at a rate that forbids all hope of profit. It has been calculated that every stag killed costs on the average fifty guineas, whilst the cost of grouse is reckoned at £1 per brace. It is not, we believe, possible to give absolutely reliable

figures of the number of deer bred and fed in Scotland, or the actual number killed in each year, nor are official statistics published of the grouse harvest, or of the rental of the various shootings. According to a list given in an appendix to the report of the commissioners who recently inquired into the condition of the crofters and cottars in the Highlands and Islands of Scotland, there are 110 deer forests in Scotland, occupying an area of 1,975,209 statute acres. Of these thirty-six are in the county of Inverness and forty-two in Ross and Cromarty, the remaining thirty-two being situated in the counties of Aberdeen (six), Argyll (six), Banff (two), Caithness (one), Forfar (four), Perth (six), and Sutherland (four), besides three forests which are partially situated in two different counties. As will be seen from the following list, some of the Scottish deer forests are of great extent:—

Forest.	Proprietor.	County.	Acreage.
Mar,	Duke of Fife,	Aberdeen,	80,100
Blackmount,	Marquis of Breadalbane,	Argyll,	70,330
Reay,	Duke of Sutherland,	Sutherland,	64,600
Glenstrathfarrar, etc.,	Lord Lovat,	Inverness,	51,290
Auchnashellach, etc.,	Lord Wimborne,	Ross and Cromarty,	49,580
Kinlochewe,	Sir Kenneth M'Kenzie,	Ross and Cromarty,	62,000
Amhuinnsuidh,	Lady Scott,	Inverness,	20,100
Glenavon,	Duke of Richmond,	Banff,	37,150
Langwell Braemore,	Duke of Portland,	Caithness,	36,030
Ben Armine, etc.,	Duke of Sutherland,	Sutherland,	35,840
Athole,	Duke of Athole,	Perth,	35,540
Glencanisp,	Duke of Sutherland,	Sutherland,	34,490
Glenquoich,	Mrs E. Ellice,	Inverness,	50,000
Ceannacroce,	J. M. Grant,	Inverness,	16,000
Glenfeshie,	{ Sir Geo. M'P. Grant, } and { The Mackintosh, }	Inverness,	33,000
Applecross,	Lord Middleton,	Ross and Cromarty,	75,000

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In addition to this list there are about eighteen forests, each containing an area exceeding 20,000 but below 30,000 acres. The largest holder appears to be the Duke of Sutherland. The united forests of Her Majesty the Queen extend over an area of 22,070 acres.

A considerable number of the Scottish deer forests are let on leases to tenants; and according to the assessment or rental, more than sixty are in the occupation of persons other than their owners, at rents which vary from £1000 to £4500 per annum. It is not possible to set down with accuracy the *actual* rents of the various forests, but approximately the following figures denote the annual value of some of the highest-rented areas, including grazing and fishing:—Ballochbuie (Balmoral), £2393; Invercauld, £2000; Mar, £4000; Blackmount, £4500; Invermark, £3500; Ardverikie, £3000; Balmacraan, £2700; Ben Alder, £1500; Ceannacrae, £2500; Glenfieshie and Invereshie, £3800; Glenstrathfarrar, £5750; Glenquoich, £3022; Athole, £3500; Auchnashellach, Coulin, etc., £2250; Applecross, £2200; Kinlochluichart, £3000; Letterewe and Fisherfield, £2370; and Strathconan, £2500. Estimating these sums of rent by the extent of acreage, it will be seen that the forest of Mar is valued at 1s. per acre, Blackmount at about 1s. 3d., Glenstrathfarrar at a little over 2s., Ceannacrae at nearly 1s. 6d., which shows an average of about 1s. 6d. At this rate the rental of the deer forests in Scotland would be a little over £148,000, for which nothing is obtained but the privilege of shooting so many deer. The following estimate has been made of the number of stags which it is calculated the forests in the counties named will yield:—

Aberdeen, . . .	400	Forfar, . . .	200
Argyll, . . .	25	Inverness, . . .	1500
Banff, . . .	60	Perth, . . .	300
Cathness, . . .	100	Ross and Cromarty, . . .	1300
Dumbarton, . . .	12	Sutherland, . . .	250

making in all 4377 stags, which if estimated at the regulation price of fifty guineas would mean a rental of very nearly £230,000 a year. But the price quoted includes various other items of expenditure than the rent, large sums being expended in wages and the exercise of hospitality; so that in all likelihood a sum equal to the rent is spent every season by the tenant of a deer forest. Various reliable figures bearing on this point were stated during the inquiry into the condition of the crofters and cottars in the Highlands and Islands of Scotland. One gentleman who was examined mentioned that his expenditure in a period of eighteen years amounted to £105,000, or more than £5000 per annum. Sir John Ramsden had expended a total sum of £180,000. Large sums are constantly being expended in repairs and improvements, greatly to the benefit of the resident population; planting, building, and earthwork are always being executed, whilst there is a constant demand for ghillies and labourers, all of whom are drawn from the crofter class, who greatly prefer such employment. 'The number of persons permanently employed in connection with deer forests as compared with sheep farms is about the same, the persons employed all the year round being foresters in the one case and shepherds in the other, and in regard to temporary or occasional employment the advantage is in favour of deer forests.'

With reference to the contention that the ground occupied by deer would be more profitably devoted to the grazing of sheep, seeing that the weight of meat derived from venison only amounts to one-fifth of the mutton displaced, it has been argued that the whole matter resolves itself into one of rental, and that if the land brings 1s. 6d. per acre as a deer forest no proprietor could be expected to accept only half of that amount for

it as a sheep walk. This has been made a sentimental question, but as a matter of fact it takes on an average five acres of land in the deer-forest regions of the Highlands to graze one sheep. The sheep fed in the four Highland counties during 1893 were as follows:—

Argyll, . . .	1,042,043	Ross & Cromarty, . . .	333,778
Inverness, . . .	672,562	Sutherland, . . .	209,265

or a total number of 2,257,548. The loss to the community (from the non-feeding of more sheep) is not only insignificant but almost inappreciable; while, owing to the large proportion of wool from abroad, the additional supply of home-grown wool would be altogether unimportant if the area now occupied by deer were devoted to sheep.

Grouse.—Grouse are most plentiful in the northern counties, and particularly in Perthshire, which is famed for the abundance and fine quality of its birds. We are unable to state the precise number of grouse moors in Scotland, as in some instances two or more are occupied by one tenant, whilst in some cases a large area may be divided into two or more shootings; but in all probability there are not less than 2400 shootings, in addition to the 110 deer forests. In the county of Perth there are at least 400 sporting estates, and the game-rental of that county exceeds to-day the sum of the whole game-rental of Scotland as it was assessed half a century since, about which period an extensive area of moorland could be had for about one-fifth of the money it costs to-day. The grouse harvest lasts from the 13th of August to the 10th of December inclusive, in the course of which time it has been estimated that during a plentiful season as many as from 800,000 to 900,000 single birds will be shot. That this estimate is not at all exaggerated may be judged from some of the individual bags. In Perthshire ten brace of grouse to each 100 acres may be calculated upon; on the Moor of Tulchan the kill in sixteen or seventeen days was 2000 birds. If each of the 2400 grouse moors of Scotland were to yield on an average only 200 brace of birds, the total number would, of course, be 480,000 brace, or 960,000 single grouse.

It is somewhat curious that, notwithstanding the prodigious annual slaughter of these birds, the number to be killed seems constantly to increase, till some kind of check takes place, such as the mysterious disease, which thins down the birds. The number of breeding birds required to provide such a supply of grouse as has been indicated, must of necessity be large, considering the constant mortality which is incident to the life of all wild animals. The breeding power of this bird of the heather is considerable. Each nest yields probably seven young ones, and as the parent grouse take great care of their young, most of the birds arrive at maturity. The exact number of moorfool that a given expanse of heather will feed and breed is not well understood; some shootings are much more populous than others, the conditions of life being more favourable, food and shelter abundant, and enemies fewer. To all appearance the number of grouse which now reach the markets is very largely in excess of the quantity shot some years ago. During the first few days of every season the markets become glutted by the arrival of birds in tens of thousands, consigned to the big dealers of London, Liverpool, and Manchester, for immediate sale to the retail poulterers. Gentlemen who lease grouse moors have no alternative but to sell their birds, as they cannot possibly dispose of them in any other way. But no profit can be obtained by such sales. As already mentioned, it is calculated that each brace shot costs the lessee of a moor £1, but it is open to question if for all he sends to market he will receive more than 2s. each; whilst, in the case of a glut, 2s. 6d.

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a brace only has been returned for consignments of 200 or 300, the prices ranging from 6d. to 4s. each bird, according to quality and condition. The economy of a grouse moor is not so well understood as it ought to be; it should have been ascertained, long ere this, how many birds should be shot, and how many left, in order to keep up a proper breeding stock. A large number of parent birds are of course required to admit of the annual slaughter of 500,000 brace of grouse. The rents derived from grouse moors range from about 9d. to double that sum per acre, and the laird receives a rental for sheep fed as well—sheep and grouse being possible on the same stretches of heather, though deer and sheep cannot exist together.

The Royal Commission appointed in 1892 to report on the land occupied as deer forests, grouse moors, and grazing farms in the Highlands and Islands of Scotland, spent about two years in visiting the localities to be reported on and hearing evidence, for which purpose sixty-four public sittings were held. Their report was issued in 1895, and stated that not only deer forests but grazing farms (including grouse moors) had been inspected, and that large tracts of land had been found by them to be unsuitable for cultivation by crofters or others, either from its sterility or inaccessible position. But they had to report, on the other hand, that a large acreage of the land examined was in their opinion suitable (1) for the creation of new crofting holdings, (2) for the extension of existing holdings, or (3) for the creation of moderate-sized farms at rents exceeding the statutory limit (£30) of the Crofters' Act. The areas, in acres, proposed to be dealt with in these three fashions are as follows:—

(1.) FOR NEW HOLDINGS.

	Old Arable.	Pasture.	Total.
Argyll,	21,247	211,268	232,515
Inverness,	17,559	255,950	273,509
Ross and Cromarty, . . .	3,076	68,037	71,113
Sutherland,	2,426	154,234	156,660
Caithness,	2,234	31,421	33,655
Orkney,	1,814	2,958	4,272
Shetland,	2,246	20,780	23,026
			794,750

(2.) FOR EXTENSION OF EXISTING HOLDINGS.

Argyll,	457	34,151	34,608
Inverness,	1,674	127,146	128,820
Ross and Cromarty, . . .	1,033	116,065	117,098
Sutherland,	370	118,892	119,262
Caithness,	270	12,595	12,865
Orkney,	356	8,357	8,713
Shetland,	368	17,454	17,822
			439,188

(3.) FOR MODERATELY SIZED FARMS.

Argyll,	1,412	105,278	106,690
Inverness,	1,546	145,723	147,269
Ross and Cromarty, . . .	1,436	133,586	135,022
Sutherland,	1,500	118,476	119,976
Caithness,	499	39,391	39,890
Orkney,	—	—	—
Shetland,	—	—	—
			548,847

Grand total, . . . 1,782,785

The report adds that in the case of all lands thus scheduled the boundaries proposed are subject to re-

adjustment. Part of the land thus scheduled by the Commissioners consisted of ground formerly under cultivation (old arable), and part of ground suitable for hill pasture; but a much larger area of both descriptions of ground was found within the limits of grazing farms than of deer forests, so it must not be assumed that the bulk of the land above-mentioned yields at present only a sporting rental. As regards the land suitable for the creation or extension of crofts, it is with very few exceptions partly arable but mainly pastoral, and it is not suggested that they would, in the majority of cases, be alone capable of maintaining the crofter and his family, but rather that this might furnish him with a home and partial occupation while he would have to depend on money or wages earned by fishing or labour for the payment of his rent and the support of his family. The Commissioners considered that the occupants should be selected with care, and that they should only be called on to pay a 'fair rent' in the statutory sense of the term. They also recommend a large extension of the 'club farm' system of cultivating such holdings, whereby the crofters should only have joint ownership in a common stock of cattle, under one central management for herding, breeding, clipping, selling, and division of profits, or when necessary imposing assessments required for their undertaking. When this system is honestly carried out, they considered it enabled the utmost to be made of the ground, while it made the individual crofter more certain of his return than he could otherwise be. The lands scheduled as suitable for moderate-sized farms at a rent above £30 were adapted for grazing farms, with a due proportion of the land under crops, and they would necessarily vary much in extent according to the nature and quality of the ground. Such farms they considered many crofters of the better class would be glad to obtain.

The Commissioners did not make any suggestion as to compensation either to owners of lands scheduled or to their present occupants, or as to fresh outlays for fencing, building, etc., necessitated by the creation of crofts, because they considered these questions beyond the scope of their directions, though they referred to the fact that such points may arise in the future. They also remark that the transference of tenants to, and their establishment in, new holdings may raise questions of public policy.

A grouse when prepared for the spit will weigh 1 lb. on an average, so that the moors provide a considerable amount of food-stuff. Red deer or roe venison is not greatly appreciated for food, the best venison for the table being that derived from fallow or park-fed deer. In Scotland there fall to the guns of the deer-stalkers in the course of the season, and from the slaughter of hinds which occurs later on, as many, perhaps, as 10,000 head of red deer and roebuck, weighing on the average 12 stone (14 lb. each) per carcase, thus yielding a food supply of 140,000 stone of venison, most of which is distributed among the servants of the forests, or in gifts to friends. It is thought that in all Scotland there are not, perhaps, more than from 50,000 to 60,000 head of deer of all kinds, which gives (at 50,000) some 40 to every 1000 acres of forest. There are not more, as the ground occupied is in many places utterly barren, and scarcely able to provide herbage for a few mountain goats. If the persons who contend that men and sheep should take the place of the deer were to visit the vast solitudes of rock and moorland, they would at once see that human habitation is an impossibility. Large sums of money are annually expended in the Scottish Highlands by the lessees of deer forests and grouse moors, which, were it not for the sport these afford, would be spent in other countries.

INDUSTRIES, SHIPPING, TRADE, AND COMMERCE.

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Industry.—The linen manufacture is of great antiquity in Scotland, and by the close of the 16th century linen goods formed the principal article of export to foreign countries. But the flax continued to be spun upon the hand-wheel down to the last years of the 18th century, and in many districts well on into the 19th century. People now living are still using napery and sheeting every thread of which was spun by their grandmothers and their maidens, to whom the whirr of the wheel was as familiar as the sound of their own fireside gossip. In 1822 the quantity of linen stamped in Scotland was 36,268,530 yards, valued at £1,396,295. By 1837 the flax factories employed 15,462 hands, and by 1856, 31,752. In the latter year there were 168 factories, with 278,304 spindles and 4011 power-looms driven by 6346 horse-power, of which 5529 was steam. In 1890 (the latest year for which general statistics have been published by Her Majesty's inspectors) the number of factories was 136, with 187,755 spinning spindles, 20,599 doubling spindles, and 18,687 power-looms; and the number of hands employed was 9553 males and 24,669 females. Of the factories 48 were for spinning only (132,553 spinning spindles, 19,017 doubling spindles; 3673 male and 6028 female employees), 76 for weaving only (15,232 power-looms; 5422 male and 11,923 female employees), and 10 for both weaving and spinning (55,202 spinning spindles, 1582 doubling spindles, and 3455 power-looms; 2426 male and 6108 female employees). The total number of those strictly engaged in the manufacture of flax and linen was 26,223 at the census of 1891. The district in which the flax manufacture is most extensively carried on is the east midland, including Forfar, Perth, Kirkcaldy, and Clackmannan. Dundee (*q.v.*) and Dunfermline are the great centres of the industry—the former for the coarser fabrics, such as sailcloth (for the British Royal Navy and that of the United States), sacking, and sheeting; the latter for table linen, in the production of which it hardly has a rival in the world. Kirkcaldy, Arbroath, Forfar, Kirriemuir, Blairgowrie, Montrose, and Aberdeen are also largely engaged in

different departments of this manufacture. Paisley is the great seat of the cotton thread manufacture. Hemp forms the material of a closely associated industry, to which twenty-seven factories were devoted in Scotland in 1890 (14,450 spinning spindles, 1735 doubling spindles; 1131 male and 2085 female employees). The importations of flax yarns from the Continent, however, have increased enormously of late years, and the market for flax goods is being constantly encroached upon by the manufacturers of jute and cotton. The rise of the jute industry was remarkably rapid: this silky fibre of the *Corchorus*, scarcely known in the country about 1835, since that year, and especially since 1860, gradually became in place of flax the great staple on which the prosperity of Dundee depends. The single factory of the Messrs Cox in Dundee used to turn out jute fabrics to the extent of nearly 16,000 miles per annum. But in recent years this phenomenal prosperity has suffered from competition with India. Jute is also manufactured at Aberdeen. The number of jute factories in Scotland in 1890 was 103, with 242,205 spinning and 10,868 doubling spindles, and 12,897 power-looms. The hands employed number 13,007 males and 26,878 females, though those strictly engaged in the manufacture of jute number only 7819 males and 21,516 females according to the census of 1891. See Alexander J. Warden, *The Linen Trade, Ancient and Modern* (London, 1864).

In several towns where the linen was once of importance, such as Glasgow and Paisley, the cotton manufacture has taken its place. The first steam-engine for a cotton factory in Scotland was built in 1792. By 1837 the number of cotton mills in the country was 177, nearly all those of considerable size being situated in Glasgow or within a radius of 20 or 30 miles from that city, where the raw material was mainly imported. In 1857 the cotton factories numbered 152, with 2,041,129 spindles and 21,624 power-looms, driven by 9971 horse-power (7641 steam), employing 7609 males and 27,089 females. The following are the figures for the cotton factories in 1890:—

	Factories.	Spinning Spindles.	Double Spindles.	Power-looms.	Males.	Females.	Total Employed.
Spinning only, . . .	32	508,727	555,200	—	2812	11,116	13,928
Weaving only, . . .	58	—	—	22,047	2472	12,864	15,336
Spinning and Weaving, . .	9	130,836	9,350	6,046	730	3,897	4,627
Others,	25	—	—	—	242	740	982
Total,	124	639,563	564,550	28,093	6256	28,617	34,878

Of the 32 spinning factories 27 were in the south-western district. Cotton spinning has considerably declined of late years, especially in Glasgow and its vicinity; but the weaving branch of the trade still retains a firm hold on the district. The industry as a whole is becoming in Scotland more and more exclusively a woman's industry. Thus, according to the census of 1891, the persons actually engaged in cotton manufacture were 3245 males and 13,188 females in all Scotland. The thread manufacture employed, besides, 812 males and 6602 females, while calico-printers, dyers, and bleachers numbered 5741 males and 4888 females.

The woollen manufacture is more generally distributed throughout the country than either the flax or the cotton manufactures. Thus in 1890 there were 2 wool spinning factories in the northern district, 2 in the north-western, 8 in the north-eastern, 23 in the east midland, 8 in the west midland, 14 in the south-western, 14 in the south-eastern, and 14 in the southern; and a somewhat less extensive distribution was reported in the case of the weaving factories. A process of centralisation has of course been going on in this as in other departments, and there are many towns and villages where the wool-spinner and fuller are forgotten craftsmen. Galashiels, Hawick, Selkirk, Dumfries, and Innerleithen are great seats of the woollen manufacture in the south of Scotland—Galashiels producing yarns,

blankets, plaids, shawls, tartans, crumbeoths, and notably tweeds; Hawick, tweeds and hosiery; Innerleithen, blankets, tartans, etc. In the northern districts, Elgin is famous for its tweeds and plaids; Inverness has a similar industry, dating from 1798; and Aberdeen produces large quantities of tweeds, winceys, etc. There are large wool-spinning mills at Kinross and Alloa, the latter town having long had great reputation for its knitting worsteds. In 1890 the total of woollen factories was 282, with 565,146 spinning spindles, 73,978 doubling spindles, and 9836 power-looms, employing 12,915 males and 18,162 females; but the total number of persons employed in the woollen manufacture in 1891 was 13,628 males and 18,383 females, exclusive of 48 males and 6181 females returned as wool-knitters. The number of worsted factories in the same year was 20, with 59,124 spinning and 25,845 doubling spindles, besides 761 power-looms. The persons employed were 1720 males and 4393 females, the chief seats of the manufacture being the counties of Renfrew, Ayr, and Lanark. Silk has never been very largely manufactured in Scotland. In 1856 there were 6 factories, with 30,244 spindles, and employing 837 persons (677 females); and in 1890 there were 11 factories, with 7917 spindles and 734 power-looms, employing 266 males and 1068 females. The chief seats are Glasgow and Paisley. Lace-making was represented only by a single factory, with 45 hands employed in 1878; while in 1890 there were 19 factories, all in the south-western district, employing 1154 males and 933 females. Hosiery-weaving, with 14 factories, gave occupation to 327 males and 664 females. Carpet-making is carried on in Kilmarnock, Paisley, Glasgow, and Ayr; and Kilmarnock is the special seat of the Scottish 'braid bannet' and the night-cap. The floor-cloth and linoleum manufacture is most developed in Kirkcaldy, where it employs 1150 hands out of a total of 1266 in all Scotland. India-rubber articles are produced in Edinburgh (where the North British Rubber Company was established in 1855 and the Scottish Vulcanite Company in 1861), and in Glasgow and Aberdeen, the industry giving employment to 3172 persons.

Paper-making in Scotland dates from about 1695, but the oldest of the paper-mills still in operation is that of Valleyfield, Penicuik, originally erected in 1709 by Mr Anderson, printer to Queen Anne. The industry is represented in fifteen or sixteen separate counties, but on a large scale only in Midlothian (which may be considered the principal seat), Aberdeen, Lanark, Fife, Perth, Stirling, and Berwick. In 1894 fifty-nine mills, with 105 machines, were engaged in the manufacture. Paper was subjected to a duty as early as 1712; and this continued to be levied till 1861, when Mr Gladstone's Bill was carried by a majority of 15 in the House of Commons, and became law on 15th June. The quantity of paper made in Scotland in 1842 was 17,065,666 lbs., and in 1860, 47,520,910; at present there is no means of forming a satisfactory estimate.

Paper-hangings began to be produced in Scotland only about the middle of the 19th century, the development of the industry being largely due to Messrs Wylie & Lochhead, of Glasgow. There were only 148 persons who returned themselves as paper-stainers in 1891.

In the exploitation of her mineral wealth, Scotland has advanced with extraordinary rapidity within the 19th century. The output of coal, which was 7,448,000 tons in 1854, was 25,482,918 tons in 1893, and only 22,316,519 tons in 1894, owing to prolonged strikes. Coal-miners numbered 32,971 in 1851 and 73,699 in 1891. Iron ores, mainly found in the district extending from North Ayrshire to Clackmannan and

Fife, are the material of an extensive industry, which employed, in 1891, 2861 miners and 35,068 manufacturing hands (the corresponding figures for 1851 being 7648 and 13,296). In 1800 the production of pig iron was only 8000 tons; between 1825 and 1845 it increased from 30,000 to 476,000 tons; and in 1894 it amounted to no less than 655,614 tons, in the production of which 1,963,606 tons of coal were used. The Carron Ironworks (*q.v.*), established in 1760, still remain one of the great seats of the manufacture, but have worthy rivals in Gartsherrie, Govan, Summerlee, Coltness, etc. In 1892 there were in Scotland 125 blast-furnaces in 22 works, 22 iron-mills and forges with 380 puddling-furnaces, and 74 rolling-mills. Steel was manufactured by the open-hearth method in 57 furnaces (Glasgow, Motherwell, Holytown, and Wishaw), and by Siemens gas furnaces in Glasgow and Coatbridge.

Lead and (to a small extent) silver are obtained in Lanarkshire (4044 tons of dressed ore in 1892, valued at £30,330, and yielding 12,873 oz. of silver); alum-shale is worked in Stirlingshire, and zinc-ore in Kirkcudbrightshire.

Since the establishment in 1850 of Mr Young's works at Bathgate for the distillation of Boghead coal, the manufacture of mineral oils has become one of the industries of the country, and in 1891 gave employment to 4969 shale-miners and 2474 workmen. Besides Bathgate, the principal seats are Addiewell and Broxburn—the shale extending from Renfrew and Lanarkshire through Midlothian and West-Lothian to Fife. About £1,440,000 of capital is invested in the industry, which has of late years suffered very severely from the competition of foreign petroleum as well as by the exhaustion of the richer species of shale, though some compensation has been obtained through improved processes of manufacture. The total quantity of shale raised in 1892 was 2,077,076 tons, valued at £519,269.

The manufacture of explosives is of considerable extent, there being in 1893 2 factories in Argyll, 4 in Ayr, 5 in Midlothian, 1 in Fife, and 2 in Stirling. Perhaps the best known is Nobel's works at Ardeer (total persons employed in manufacture, 185 male and 130 female).

Working in gold, silver, and precious stones is largely carried on in Edinburgh and Glasgow, the former city especially being famous for its lapidaries. But though in the census of 1891 no fewer than 2854 are returned as watch and clock makers, hardly a single watch is really made in the country, which imports from England, Switzerland, and America. Clock-making, however, still exists to a limited extent.

A pottery was established at Glasgow in 1748, and that city is still the great seat of the manufacture in Scotland, though there are establishments of considerable importance also at Greenock, Sinclairtown (Kirkcaldy), Portobello, and Dunmore (near Stirling). The persons employed in 1871 were 2062, in 1881, 3171, and in 1891, 4128. A cave at Wemyss on the coast of Fife still bears the name of 'the Glass Cave,' from the works erected there by George Hay, under a patent from James VI. The glass-making industry then introduced is now of great extent. Fine cut glass or 'crystal' is produced on a large scale and in the highest possible style by Mr Ford of Edinburgh. While in 1871 759 persons were employed in the manufacture, the number in 1881 was 1665, and in 1891, 2048. The clay brought up from the coal mines in some places, as at Prestonpans, is used for making drain and water pipes.

After the reduction of the duty on whisky in 1823 from 6s. 2d. to 2s. 4½d. per imperial gallon, the legal production, which had previously to compete with an enormous illicit competition (200 illicit stills known

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to exist in Glenlivet), made a very rapid advance; and in 1824 even the precincts of Glenlivet itself were invaded by George Smith, who defended his distillery against the hostility of the smugglers by 'two or three stout fellows armed with pistols.' The quantity charged duty for home consumption in Scotland was in 1822 only 2,225,124 gallons, and in 1825 it was 5,981,549. The quantity produced in 1840 was 9,032,353 gallons; in 1850, 11,638,429; and in 1865, 13,445,752. By 1878 the amount was 17,670,460 gallons, and by 1894 21,472,441. In this last year the number of distilleries at work was 132, only twelve more than the number in 1824, though between 1830 and 1840 there were upwards of 200. The places where the larger distilleries are situated are Edinburgh, Glasgow, Campbeltown, Linlithgow, and the neighbourhood of Elgin and Inverness. The quantity of spirits consumed as beverage in 1894 was 6,422,289 gallons, or at the rate of 1·569 gallons per head of the population. The number of persons employed in distilling was 1392 in 1891.

The Scottish people, though generally considered drinkers of whisky rather than beer, were in 1725 so incensed at the proposal to tax their malt, as to resort to very violent proceedings against the imposition. At Glasgow the riots were so serious that General Wade had to take possession of the city with a large force. In 1835 there were 640 persons licensed to brew beer in Scotland; in 1866 the number was 217 (98 wholesale brewers). This decrease is due to the gradual centralising of the industry in large establishments, the most important of which are situated in Edinburgh and Leith. On the abolition of the malt-tax a very large number of licenses for domestic brewing were taken out, but they have since gradually decreased. In 1836 the Scottish brewers consumed 1,137,176 bushels of malt; in 1866, 2,499,019 bushels; and in 1880, the last year of the malt tax, 2,613,823. In 1882 the number of barrels of beer brewed was 1,088,000; in 1831, 1,122,360; and in 1894, 1,744,512, of which 218,727 barrels were exported in drawback, and 1,525,787 were retained for consumption. In 1891 the number of persons engaged in brewing was 2084.

Sugar-refining commenced at Greenock in 1765, has still its chief seat in that town, though it is also prosecuted to some extent in Leith, Glasgow, Dundee, etc. The manufacture of confectionery and fruit preserves

is carried on in Edinburgh, Glasgow, Dundee (marmalade), and Forfar; and food-preserving is an important industry in Aberdeen, Leith, and Edinburgh. The census of 1891 shows 1187 persons engaged in sugar-refining; but no distinction has been made between ordinary confectioners and pastrycooks, and those really worthy of the name of manufacturers.

Space forbids any attempt to give details in regard to the multitude of miscellaneous trades which exist in Scotland; some, like the leather and the soap manufacture, of old standing and wide distribution, and others, like the making of cycles and sewing machines, of modern introduction and limited localisation. But we must not omit the great printing and publishing trade, which, with its headquarters in Edinburgh, has secondary centres in most of the principal towns, such as Glasgow, Aberdeen, Paisley, and Perth. The Edinburgh printing establishments do a large amount of work for the London publishers. In map-making Edinburgh may claim to be the leading city in the United Kingdom. In 1895, 216 (daily 19) newspapers were published in the country. No recent history of Scottish manufactures can be referred to. *Brenner's Industries of Scotland* (1869) is an excellent compendium, but requires to be recast and brought down to date. Much interesting matter will be found in *Notices of some of the Principal Manufactures of the West of Scotland* by Day, Mayer, Paton, and Ferguson (Glasgow, 1876).

Shipping and Trade.—Though as far back as 1249 a magnificent vessel (*navis miranda*) was, according to Mathew Paris, specially built at Inverness for the Earl of St Pol and Blois to carry him with Louis IX. of France to the Holy Land, the number of ships in Scotland continued to be very inconsiderable till quite a recent period. In 1656 we had only 137 vessels, none of more than 300 tons burden, and making an aggregate of 5736 tons. By 1707 the number of vessels was still only 215, and the aggregate tonnage 14,485. But after the Union rapid advance was made. By 1800 the tonnage was 171,728 tons, and by 1840, 429,204 tons. Since the middle of the 19th century, when steam navigation (practically introduced in 1811 by Glasgow enterprise) had already become of great importance, the progress has been still more striking, as is shown by the following table of registered shipping:—

Year.	Sailing Vessels.		Steam Vessels.		Total Sailing and Steam Vessels.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1850	3432	491,395	169	30,827	3601	522,222
1860	3172	552,212	314	71,579	3486	623,791
1870	2715	727,942	582	209,142	3297	937,084
1880	2358	849,089	1095	598,951	3453	1,448,040
1890	1560	809,048	1616	1,099,332	3176	1,908,380
1891	1511	831,902	1653	1,140,828	3164	1,972,730
1892	1510	894,227	1710	1,181,003	3220	2,075,230
1893	1469	971,214	1764	2,005,919	3233	2,977,133

The following table exhibits the growth of the registered shipping at each of the leading ports between 1857 and 1894:—

			Sailing Vessels.				Steam Vessels.				Total Tonnage.	
			Number.		Tonnage.		Number.		Tonnage.			
			1857.	1893.	1857.	1893.	1857.	1893.	1857.	1893.	1857.	1893.
Glasgow.	.	.	458	582	162,355	557,740	153	1052	56,951	847,324	218,946	1,405,064
Greenock.	.	.	386	203	83,304	173,624	80	112	5,739	118,709	89,043	292,333
Aberdeen.	.	.	252	52	65,814	48,893	15	137	4,347	56,565	70,161	105,458
Dundee.	.	.	269	83	50,477	70,421	9	92	1,852	62,666	52,329	133,087
Leith.	.	.	150	27	21,370	6,658	39	172	6,809	109,613	28,179	116,271

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Turning from the shipping owned in Scotland to the extent of tonnage employed in Scottish trade, we find the expansion no less remarkable:—

Year.	Coasting Trade.		Colonial and Foreign.		Total.	
	Inwards.	Outwards.	Inwards.	Outwards.	Inwards.	Outwards.
1851	2,010,988	2,105,224	663,321	753,312	2,674,309	2,858,536
1856	2,049,390	2,056,090	793,193	965,447	2,842,583	3,021,537
1880	6,628,853	5,691,136	2,700,915	3,001,897	9,329,768	8,693,033
1890	7,557,337	7,357,304	4,093,797	4,723,203	11,651,134	12,080,512
1893	8,513,088	8,168,072	4,262,733	5,067,626	12,775,821	13,235,698

The enormous commerce which this represents has been nearly all developed since the Union, shortly after which attention began to be given to the trade with the American and the West Indian Colonies. In 1755 the exports amounted in value to £535,576, and the imports to £465,411. By 1801 the corresponding figures were £2,844,502 and £2,579,914; by 1851

they had increased to no less than £5,016,116 for exports, and £8,921,108 for imports. And if the increase in the first half of the century is great, much greater and more rapid has been the increase in more recent years. The following are the figures for the decade from 1884 to 1893:—

Year.	Imports of Foreign and Colonial Merchandise.	Exports of the Produce and Manufactures of the United Kingdom.	Year.	Imports of Foreign and Colonial Merchandise.	Exports of the Produce and Manufactures of the United Kingdom.
1884	£30,600,258	£20,450,987	1889	£36,771,016	£22,310,006
1885	32,176,862	18,881,221	1890	35,165,217	24,749,907
1886	27,919,943	18,868,094	1891	34,103,809	22,576,535
1887	29,771,600	18,849,533	1892	35,944,574	21,564,543
1888	31,221,273	20,821,354	1893	32,279,196	22,247,325

As showing how these later totals are distributed among the different ports, the following tables are of interest:—

VALUE OF THE TOTAL EXPORTS OF THE PRODUCE OF THE UNITED KINGDOM AT EACH PORT.

	1888.	1889.	1890.	1891.	1892.	1893.
Aberdeen,	£133,361	£108,010	£127,490	£109,695	£129,125	£170,008
Alloa,	106,889	119,144	154,280	145,236	137,849	114,775
Arbroath,	5,338	4,325	4,552	10,525	11,238	4,430
Ardrossan,	12,919	26,044	24,951	25,485	59,980	79,436
Ayr,	13,397	21,112	20,408	22,174	25,722	15,700
Banff,	38,216	46,066	46,106	56,511	61,488	39,065
Borrowsmouth, . .	161,056	196,385	273,065	244,981	252,844	249,742
Campbeltown, . . .	—	8	—	—	7	—
Dundee,	861,175	1,005,655	930,002	1,050,614	1,000,399	998,179
Glasgow,	14,461,488	14,880,389	16,416,197	14,055,259	13,229,713	13,616,307
Grangemouth, . . .	698,316	866,161	1,107,094	1,166,823	1,235,788	1,548,425
Granton,	82,777	81,974	139,621	168,756	150,318	142,179
Greenock,	176,585	271,798	231,448	230,554	259,601	253,788
Inverness,	22,354	23,275	24,090	27,800	28,433	21,129
Kirkcaldy,	325,761	474,204	669,729	676,484	705,820	614,483
Kirkwall,	15,206	20,587	13,605	33,527	16,788	17,925
Leith,	3,016,038	3,361,498	3,652,617	3,706,925	3,554,303	3,606,670
Lerwick,	98,432	63,867	107,488	112,834	37,227	86,215
Montrose,	99,813	103,571	114,804	61,144	41,472	42,052
Perth,	—	—	—	—	930	—
Peterhead,	258,929	373,228	405,482	349,531	449,398	446,445
Stornoway,	98,023	98,931	115,295	125,298	75,622	59,899
Troon,	23,853	41,337	42,667	55,477	47,525	46,883
Wick,	111,428	122,437	123,916	90,929	52,953	73,590

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VALUE OF THE TOTAL IMPORTS OF FOREIGN AND COLONIAL MERCHANDISE.

	1888.	1889.	1890.	1891.	1892.	1893.
Aberdeen,	£662,102	£855,066	824,108	£886,887	£938,194	£725,839
Alloa,	157,515	222,937	174,999	216,791	231,711	155,573
Arbroath,	105,212	105,637	140,175	83,996	138,401	117,175
Ardrassan,	66,540	95,739	118,153	66,293	161,360	176,406
Ayr,	79,668	143,467	144,518	118,625	137,132	141,411
Banff,	12,038	16,932	3,186	7,099	14,859	11,522
Borrowstouness,	219,778	261,836	251,925	199,564	238,124	174,623
Campbeltown,	78,829	50,734	57,490	55,788	87,977	44,912
Dumfries,	2,700	8,528	3,863	6,486	8,565	8,890
Dundee,	3,852,341	4,434,633	4,451,716	4,006,544	3,855,245	3,348,504
Glasgow,	10,864,084	12,683,064	13,127,550	12,555,658	13,422,582	11,317,274
Grangemouth,	1,902,753	2,465,548	1,978,146	1,980,783	2,093,144	2,592,647
Granton,	417,724	382,629	411,348	491,118	542,960	446,625
Greenock,	3,170,323	3,879,804	2,449,099	2,458,588	2,690,598	2,231,797
Inverness,	58,991	63,649	58,382	63,009	68,080	59,016
Irvine (created a port in 1892),	—	—	—	—	8,991	20,164
Kirkcaldy,	213,641	214,219	169,095	202,546	200,237	138,762
Kirkwall,	6,611	5,292	6,138	9,737	13,670	9,465
Leith,	3,966,927	10,236,661	10,347,097	10,245,567	10,673,949	10,117,745
Lerwick,	7,256	8,465	4,729	9,144	5,247	10,464
Methil (created a port in 1892),	—	—	—	—	15,507	56,698
Montrose,	220,401	331,188	234,812	271,056	180,827	193,945
Perth,	12,527	13,762	14,463	18,781	19,619	20,947
Peterhead,	21,528	45,679	28,162	32,002	39,831	49,803
Stornoway,	4,790	3,620	7,255	11,823	9,758	5,481
Stranraer,	834	2,151	2,811	2,054	5,971	300
Troon,	94,987	162,293	129,262	79,741	115,669	85,062
Wick,	21,168	26,573	25,906	22,714	23,622	17,323
Wigtown,	—	910	829	1,410	2,744	823

Shipbuilding.—This industry has been for many years one of the most important departments of Scottish enterprise, the shipbuilders of Glasgow and the Clyde especially having taken a large share in the establishment of the great international steam-ship lines. Between 1818 and 1830 steam navigation per-

haps owed more to David Napier of Glasgow than to any other man, and his successors have not been unworthy of him. Many of the most powerful vessels of the Royal navy are Clyde-built. The following figures show the number and tonnage of vessels built at different periods, exclusive of those built for foreigners:—

Year.	Sailing.		Steam.		Total.		Year.	Sailing.		Steam.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.		Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1851	...	—	—	—	136	30,000	1891	74	97,700	186	90,371	260	188,071
1880	85	19,897	171	119,657	206	139,554	1892	100	167,244	174	71,891	274	239,135
1890	82	78,621	182	131,097	264	209,718	1893	65	86,618	172	89,082	237	175,700

Next to the Clyde ports (Glasgow, Port-Glasgow, Greenock), come Dundee, Leith, and Kirkcaldy. In 1893, 45 vessels (24,440 tons) were built for foreigners.

Banks.—While in 1708 the development of the banking system was hampered in England by legislative enactment, in Scotland it was left to its natural course. The result is, that while in this country the 'Bank of Scotland,' so called, is the only bank constituted by Act of Parliament, there also exists a strong body of private banking establishments. These have shown, as a whole, remarkable stability, though the failure of the City of Glasgow Bank in 1878 revealed

unexpected elements of weakness, and induced the seven banks which were established within the 19th century to adopt the principle of limited liability, whereby the liability of their shareholders is restricted to the amount of the uncalled capital and reserve liability. Previous to that disaster, the failure of the Western Bank (established 1832, with a capital of £1,500,000), and the suspension of the City of Glasgow Bank in the crisis of 1857, had been the most alarming incidents. The following table shows the position of the savings banks under trustees in Scotland in 1864, 1883, and 1893:—

Year.	No. of Banks.	No. of Accounts.	Amount Owing to Depositors.	Invested with National Debt Commissioners.	Average Rate of Interest Paid to Depositors.	Total Cost of Management.
1864	54	159,319	£2,221,001	£2,819,201	£2 19 1	£9,622
1883	53	310,961	7,359,586	7,331,495	2 14 1	22,726
1893	50	376,062	10,478,772	10,467,211	2 9 5	29,052

ROADS, CANALS, RAILWAYS, STEAMERS, TELEGRAPHS, Etc.

An act for allowing the deposit of small savings in such post offices as might be authorised by the Postmaster-General was passed in 1861, under which 220,117 accounts had been opened with the Post Office in Scotland to 1893; and since 1861 13 private

savings banks in Scotland have closed and transferred their funds in whole or in part to Post-Office Savings Banks.

The following table exhibits various details regarding the several banks:—

Instituted.	Name.	Partners.		Branches.		Paid-Up Capital.	Uncalled Capital and Reserve Liability.
		1864.	1883.	1864.	1893.	£	£
1695	Bank of Scotland,	—	2070	60	116	1,250,000	625,000
1727	Royal Bank,	—	2548	74	129	2,000,000	—
1746	British Linen Company,	798	2164	52	117	1,250,000	—
1810	Commercial Bank, Limited,	805	2560	76	141	1,000,000	4,000,000
1825	National Bank of Scotland, Limited,	1455	2265	72	107	1,000,000	4,000,000
1830	Union Bank of Scotland, Limited,	1060	2140	103	132	1,000,000	4,000,000
1825	Town and County Bank, Limited,	529	1559	31	61	252,000	1,008,000
1836	North of Scotland Bank, Limited,	1249	3326	34	67	400,000	1,600,000
1838	Clydesdale Bank, Limited,	1802	2059	60	110	1,000,000	4,000,000
1838	Caledonian Banking Company, Limited,	725	1000	16	26	150,000	600,000

The Perth Bank (circulation £45,515) was incorporated with the Union Bank in 1857, the Edinburgh and Glasgow Bank (circulation £137,104) with the Clydes-

dale in 1858, the Eastern Bank (circulation £37,440) with the Clydesdale in 1863, and the Dundee Bank (circulation £38,616) with the Royal in 1864.

ROADS, CANALS, RAILWAYS, STEAMERS, TELEGRAPHS, Etc.

By THOMAS ALLAN CROAL, Edinburgh, Correspondent of the *Railway News*, London.

If the civilisation of a country were to be measured by the condition of its communications, Scotland would in her earlier history present a problem of a mixed kind. Of good roads, in the modern sense, she has become abundantly supplied within a century and a half, but previous to that time there were comparatively few 'made' roads, excepting those wonderful works of the Romans, whose remains still excite admiration. But it is urged by competent modern writers that Scotland stood higher four hundred years before the Union in all that indicates prosperity and order, and in particular as regards roads and bridges, than she did in the intervening period. The two great Roman roads entered Scotland near Carlisle and Jedburgh, the former advancing through Eskdale and crossing Birrenswark (where remains of a strong camp exist), thence northward, till it reached the western extremity of the northern wall; while the latter passed by the Eildon Hills, and thence to the shores of the Forth. Other roads of lesser importance were made, and north of the wall the road has been traced as far as the heart of Aberdeenshire. There are in Scotland several reputed Roman bridges, examples being at Inveresk in the east and Inverkip in the west. The bridges in the post-Roman period were numerous, including those over the Forth at Stirling, the Tay at Perth, the Esks (North and South), the Spey, the Dee, etc. The selection of points for bridges was so happy, that succeeding ages have in most cases simply replaced or duplicated those structures, except where the advance of science has sought to bridge estuaries instead of rivers. Though roads were of necessity numerous, their quality was, as a rule, poor, more especially in upland districts and in the Highlands. Hence the expression 'a made road' is so well understood in Scotland, that it is only the stranger who finds anything incongruous in the reference to Wade's military roads 'before they were made.' Most of the roads were mere footpaths, or were at best intended for riders or for use as drove roads. 'What vexed me most of all,' says Captain Burt in his *Letters*,

'they called it a road.' Yet fifty years before General Wade came to Scotland, a visitor had expressed his opinion that 'the highways in Scotland are tolerably good' (Kirke's *Modern Account of Scotland*). Their goodness must have been relative, for we find that about this period, when a coach was to be run between Edinburgh and Glasgow, the contractor only undertook to perform the journey there and back in six days, employing six horses, and the enterprise, though subsidised, proved unprofitable, and was given up. For interesting glimpses of the state of the roads of Scotland, reference may be made to various passages in Hill Burton's *History*; to Boswell's *Tour*, with Dr Carruthers' notes on this point; to Scott in *Guy Mannering* and other works; to MacCulloch's *British Empire*, etc. The Great North Road between Perth and Inverness, with its less important side roads, the parliamentary roads and bridges planned by Telford and carried out in the 19th century, and the enterprise of the various counties, or of individual proprietors (the Duke of Sutherland, for example), have covered Scotland with a network of good roads; while the necessities of the modern tourist traffic have caused many old roads to be improved, or new roads to be made. An example of the improvement of old roads is seen in the amended gradients of the road from Auchnasheen to Gairloch by Loch Maree; and a new road, entirely the growth of tourist traffic, was made in 1884 from the 'Clachan of Aberfoyle' to the Trossachs. The earliest Turnpike Act in Scotland dates from 1750, and under it and subsequent acts many highways and cross roads were made. Tolls were always a grievance in Scotland as elsewhere, and although (except in the case of some riotous proceedings at Dunkeld Bridge) Scotland had no 'Rebecca's Daughters' to tear down the toll bars, a vigorous agitation arose against them. In 1845 Mr Pagan of Cupar Fife took up the subject, and after much discussion a Royal Commission was appointed, which in 1859 recommended a plan for the total abolition of tolls, and in 1883, under a general act passed

in 1878, tolls ceased throughout Scotland, the roads being maintained by a general assessment. The Commission reported that in 1859 there were 5768 miles of turnpike road in Scotland, with 1060 tolls upon them.

Canals were the second means of internal communication, and a considerable number of such waterways were constructed in Scotland, most of them being still in use. The canal from Aberdeen to Inverurie was partly utilised in the construction of the Great North of Scotland Railway, the company having acquired its ownership; and the Glasgow and Paisley Canal has been converted into a railway. But the Caledonian and Crinan Canals, the Forth and Clyde Canal, the Union Canal, and the Monkland Canal are still used, and are described in detail in other parts of this work. Owing to the increased size of vessels, those canals, although made for the transit of sea-going vessels, have ceased to fulfil that function, but are largely used for local purposes. Powers were obtained to construct a ship canal between East and West Tarbert, on the Mull of Kintyre, to shorten the voyage to the Clyde and save the dangers of rounding the Mull, but they have not been exercised. Proposals for the construction of a ship canal between the Forth and the Clyde have recently been discussed, one scheme taking the existing canal route by Kilsyth, and another proposing to utilise Loch Lomond as part of the waterway. But those schemes are yet in the air.

The formation of Scotland, and the insular and peninsular character of so much of Argyll, Inverness, and Ross, made steam navigation of much benefit as a means of communication. The steamboat had its birth on the Clyde in Henry Bell's *Comet*, and to this day the Clyde shows supremacy in the building of steamers, and great enterprise in the use of them. Some of the earliest sea-going steamers in Britain were those from Leith to London, Dundee, etc. Two lines of well-appointed steamers still run from Leith to London, and there are also vessels from Dundee and Aberdeen to London sailing regularly. From Glasgow steamers go to Canada and the United States, to the Mediterranean and India, and to Australia, South America, China, etc. Lines of steamers also sail regularly to Belfast, Dublin, Liverpool, Bristol, Southampton, Cork, etc.; and steamers to Ireland also sail from Ardrossan and Stranraer. From Leith well-known lines of steamers sail to Aberdeen, Kirkwall, and Lerwick; to Antwerp, Rotterdam, Hamburg, the Baltic, Norway, Iceland, etc.; and a line has been established between Leith and New York, with Dundee as a port of call. Grangemouth has also a large coal traffic by steamer to England and the Continent. The most extensive local system of steamer communication is that from the Clyde to Inveraray, Oban, Skye, and the Western Islands. This service was begun by Messrs Burns of the Cunard line, but it was not fully developed until taken over from that firm in 1851 by Mr David Hutchesson, whose labours have since been taken up by Mr David M'Brayne. The 'Royal Route' to Oban (so called because the Queen went by it on her west-coast tour in 1847) was originally served by the first *Iona*, a vessel since replaced by two of the same name, and now superseded by the magnificent *Columbia*, the largest, most completely equipped, and most popular pleasure steamer in the kingdom. While trading steamers of the line sail round the Mull of Kintyre, and maintain, summer and winter, a most valuable connection with the Inner and Outer Hebrides, the tourist service is conducted by the *Columbia* to Ardrishaig, thence by Crinan Canal, and to Oban. From that port vessels sail to Inverness by the Caledonian Canal, to Tobermory in Mull, to Staffa and Iona, to Stornoway, Lochmaddy, etc. A railway steamer connects Skye with Strome Ferry, the present terminus of the Dingwall and Skye railway; and many

steamers from Greenock, Gourock, Craigendoran, Wemyss Bay, Fairlie, and Ardrossan maintain connection with Dunoon, Rothesay, Arran, and the many fine watering places with which the shores of the Clyde and its numerous sea lochs are studded. Steamers also sail on Loch Lomond, Loch Katrine, Loch Earn, Loch Loch Tay, Loch Eck, and other waters in connection with the tourist routes by coach and rail, and there is a fine holiday service of saloon steamers on the Forth.

Railways were first used in Scotland in connection with coal-mining, and the earliest lines were rather tramways than railways. The line from Tranent Colliery to Cockenzie Harbour, the embankment of which served as a military point in the battle of Prestonpans in 1746, was really a tramway. The road still exists, but a side line from the North British Railway has taken its place so far as regards the conveyance of coal from the pit. The earliest railway constructed in Scotland under an Act of Parliament was the Kilmarnock and Troon, the Act for which was passed in 1808, and which was completed in 1810. This line, which is now part of the Glasgow and South-Western Railway system, was primarily constructed for the conveyance of coal, but passenger omnibuses were run on it, and a 'trip on the tramcar from "Auld Killie" to Troon and back was in summer among the luxuries indulged in by "Kilmarnock Wabsters"' (M'Ilwraith's *Glasgow and South-Western Railway*). The railway system of Scotland has been fully described under the Caledonian, Glasgow and South-Western, Great North of Scotland, Highland, and North British railways, the whole country being practically in the hands of those five companies. In 1894 the West Highland railway, of 100 miles in length, was opened between Helensburgh and Fort William, passing through a splendid series of picturesque scenes in loch, moor, and mountain. This is the greatest length of railway opened in the kingdom at one time. Proposals for a railway from Fort William to Inverness by the line of the Caledonian Canal have been put forward. The Glasgow subway, worked in two tunnels, as in the line from King William Street to Stockwell in London, is a railway in name, but more properly may be deemed a local tramway, and as such, perhaps, belongs to the next paragraph.

The construction of tramways in Scotland dates from 1871, when the first portion of the Edinburgh tramway system was opened for traffic. As has been stated, the earlier railways were practically tramways in their method of construction, but the tramway as a means of internal communication within towns is of modern introduction. The system had its origin in America, and was first introduced into Britain, though in an incomplete form, by Mr G. F. Train, who formed the Birkenhead tramway in 1862. In Scotland there are lines in Edinburgh, traversing the city, and connecting with Leith, Newhaven, and Portobello; in Glasgow, Aberdeen, Dundee, and Greenock, Paisley, Rothesay, and Stirling. Animal power only has been used on those lines, except in Dundee, on the Govan section of the Glasgow tramways, and experimentally for a time between Edinburgh and Portobello, where steam locomotives have been in use. The Edinburgh Northern tramways, consisting of two lines from Princes Street to the low-lying northern suburbs, are worked on the cable system. This system has been in use in San Francisco since 1873 with great success; also later in Chicago, and the first cable tramway in Britain was opened at Highgate Hill, in London, in May 1884. Of the tramways here enumerated those of Glasgow were constructed, and are now worked, by the Corporation; in Edinburgh the city portion has been acquired by the Corporation and let on lease; while in Dundee the lines were constructed by the city and are worked

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on lease. The Edinburgh Northern lines are still independent, and as the city could not acquire the lines in Leith or Portobello, these still belong to the 'Edinburgh Street Tramways Company,' which thus owns no tramways in Edinburgh streets! No electric traction on tramways has been introduced in Scotland, but horse-haulage is universally condemned, and in America electricity is even superseding the cable.

Previous to the purchase of the telegraphs by Government in 1870, Scotland was almost wholly dependent on the railway lines for telegraph communication. The United Kingdom Company was originated to carry out the ideas of Mr Thomas Allan of Edinburgh in favour of a uniform charge, irrespective of distance; but the railways being already monopolised, powers were obtained to construct telegraph lines on the turnpike roads, and by this means a few places were favoured with a telegraphic connection apart from the railway. An important exception was the enterprise of the Orkney and Shetland Telegraph Company, whose line did valuable service in connecting the islands telegraphically with the mainland; and the purchase of this system some time after the other telegraphs secured for the islands a share in the benefits of the post office uniform charge, without those questions of guarantee which for a time so much impeded telegraph extension to the insular fishing stations in Scotland. Under recent legislation, local authorities have powers to offer guarantees for new telegraph lines, and by this means a number of outlying and insular places have obtained wires. The telegraph system of Scotland embraces full and direct connection with London at Edinburgh and Glasgow; direct London wires to Dundee, Aberdeen, Greenock, and Leith; wires from Edinburgh and Glasgow to Liverpool, Manchester, Leeds, and other important English towns; and a considerable network of local lines radiating from Edinburgh, Glasgow, Perth, Aberdeen, Inver-

ness, and other centres to the smaller towns and remote districts. The terminal point northwards is Baltasound in Unst, and the wires are found at outlying places like Tongue in Sutherlandshire, in the islands of Skye, Lewis, Harris, Mull, and Islay, and at Castlebay in Barra, the extreme point of the 'Long Island.' One of the most interesting telegraph lines in Scotland is that from Fort William to the Scottish Meteorological Society's Observatory on the summit of Ben Nevis. A good road having been made to the top, the observatory is now a favourite resort for tourists, especially since the opening of the West Highland railway, and the opportunity of telegraphing home from 'the highest point in the British Islands' is much appreciated by visitors.

Internal communication by telephone was partially begun in Scotland in 1879-80. Competing systems were established in Edinburgh and Glasgow, but in both those cities the business was finally merged in one 'Exchange,' that of the National Telephone Company. Smaller 'exchanges' exist in Paisley, Greenock, Aberdeen, Galashiels, Kirkcaldy, Inverness, etc. In Dundee the Dundee and District Telephone Company established an exchange, while the National Telephone Company had also an exchange. The result of this rivalry was that telephone connection was cheaper for a time in Dundee than in any other town; but the local company has been overcome. Owing to the royalty claimed by the post office under the legal decision that a 'telephone' is a 'telegraph,' and the almost prohibitory conditions for trunk wires between towns, the progress of telephony was at first much retarded throughout the kingdom; but in 1894 certain arrangements as regards trunk wires were made by the post office, which have rendered the extension of the system, and especially the growth of telephone connections between distant towns, much more easy. The telephone subscribers in Scotland in 1894 numbered about 8000.

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By H. A. WEBSTER, F.R.S.E., sometime Honorary Editor of the *Scottish Geographical Magazine*.

At the Union, in 1707, the population of Scotland probably did not exceed 1,050,000; and in 1755, from data furnished mainly by the clergy, it was estimated at 1,265,380. The first Government census was taken in 1801, and the tenth in 1891. The tables on next page show, for each of the counties and for the whole kingdom, the returns of the whole series, with the increase or decrease per cent. during each ten years, decrease being indicated by the sign -. The figures for the census of 1891 are those of the counties as altered in that year by the Boundary Commissioners, who, however, left the boundaries of Kirkcudbrightshire, Wig-

townshire, and Orkney and Shetland untouched. This ought especially to be remembered when comparing the increase or decrease in the figures for 1891 with the other columns, for while by the Orders of the Commissioners the boundaries of certain counties were enlarged, those of others were of course contracted.

Since about the middle of the 19th century the islands of Scotland have been steadily diminishing in relative population, the people being obliged from causes which are still the subject of bitter and intricate controversy, to emigrate in large numbers to the mainland or to the various British Colonies:—

	Census 1861. Pop.	Percent. to Total Pop.	Census 1871. Pop.	Percent. to Total Pop.	Census 1881. Pop.	Percent. to Total Pop.	Census 1891. Pop.	Percent. to Total Pop.
Mainland,	2,897,300	94·61	3,198,109	95·18	3,573,081	95·65	3,865,748	96·03
Islands,	164,994	5·39	161,909	4·82	162,492	4·35	159,899	3·97

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Counties.	Persons.									
	1801.	1811.	1821.	1831.	1841.	1851.	1861.	1871.	1881.	1891.
Aberdeen,	121,065	133,871	155,049	177,657	192,387	212,032	221,569	244,608	267,990	284,036
Argyll,	81,277	86,541	97,316	100,978	97,371	89,298	79,724	75,679	76,468	74,085
Ayr,	84,207	103,839	127,299	145,055	164,356	189,858	198,971	200,809	217,519	226,386
Banff,	37,216	38,433	43,663	48,337	49,679	54,171	59,215	62,028	62,736	61,684
Berwick,	30,206	30,893	33,385	34,048	34,438	36,297	36,613	36,486	35,392	32,290
Bute,	11,791	12,033	13,797	14,151	15,740	16,608	16,331	16,977	17,657	18,404
Caithness,	22,609	23,419	29,181	34,529	36,343	38,709	41,111	39,992	38,855	37,177
Clackmannan,	10,858	12,010	13,263	14,729	19,155	22,951	21,450	23,747	25,680	33,140
Dumbarton,	20,710	24,189	27,317	33,211	44,296	45,108	52,034	58,857	75,338	98,014
Dumfries,	54,597	62,960	70,878	73,770	72,830	78,123	75,878	74,808	76,140	74,245
Edinburgh,	122,597	148,607	191,514	219,345	225,454	259,435	273,997	328,379	389,164	434,276
Elgin or Moray,	27,760	27,967	31,398	34,498	35,012	38,959	43,322	43,128	43,788	43,471
Fife,	98,743	101,272	114,556	128,839	140,140	153,546	154,770	160,735	171,931	190,365
Forfar,	99,053	107,187	113,355	139,606	170,453	191,264	204,425	237,567	266,360	277,735
Haddington,	29,986	31,050	35,127	36,145	35,886	36,836	37,634	37,771	38,502	37,377
Inverness,	72,672	77,671	89,961	94,797	97,799	96,500	88,261	88,015	90,454	90,121
Kincardine,	26,349	27,439	29,118	31,431	33,075	34,598	34,466	34,630	34,464	35,492
Kinross,	6,725	7,245	7,762	9,072	8,763	8,924	7,977	7,198	6,697	6,673
Kirkcubright,	29,211	33,684	38,903	40,590	41,119	43,121	42,495	41,859	42,127	39,985
Lanark,	147,692	191,291	244,387	316,819	426,972	530,169	631,566	765,339	904,412	1,105,899
Linlithgow,	17,844	19,451	22,685	23,291	26,872	30,135	38,645	40,965	43,510	52,808
Nairn,	8,322	8,496	9,268	9,354	9,217	9,956	10,065	10,225	10,455	9,155
Orkney and Shetland,	46,824	46,153	53,124	58,239	61,065	62,533	64,065	62,882	61,749	59,164
Peebles,	8,735	9,935	10,046	10,578	10,499	10,738	11,408	12,330	13,822	14,750
Perth,	125,583	134,390	138,247	142,166	137,457	138,660	133,500	127,768	129,007	122,185
Renfrew,	78,501	93,172	112,175	133,443	155,072	161,091	177,561	216,947	263,374	230,812
Ross & Cromarty,	56,318	60,853	68,762	74,820	78,635	82,707	81,406	80,955	78,547	78,727
Roxburgh,	33,721	37,230	40,892	43,663	46,025	51,642	54,119	47,407	53,442	53,500
Selkirk,	5,388	5,889	6,637	6,833	7,990	9,809	10,449	18,572	25,564	27,712
Stirling,	50,825	53,174	65,376	72,621	82,067	86,237	91,926	98,218	112,443	118,021
Sutherland,	23,117	23,629	23,840	26,518	24,782	25,739	25,246	24,317	23,370	21,896
Wigtown,	22,918	26,391	33,240	36,258	39,195	43,883	42,095	38,830	33,611	36,062
Totals,	1,600,420	1,805,864	2,091,521	2,364,386	2,620,184	2,888,742	3,062,294	3,360,018	3,735,573	4,025,647

Counties.	Increase or Decrease per cent.									
	1801 to 1811.	1811 to 1821.	1821 to 1831.	1831 to 1841.	1841 to 1851.	1851 to 1861.	1861 to 1871.	1871 to 1881.	1881 to 1891.	
Aberdeen,	10	16	15	8	10	4.4	10.40	9.56	4.98	
Argyll,	6	12	4	—4	—9	—12.0	—5.07	1.04	—1.91	
Ayr,	23	23	14	13	15	4.8	0.92	8.32	4.03	
Banff,	3	14	11	3	9	9.3	4.74	1.15	2.25	
Berwick,	2	8	2	1	5	0.8	—0.35	—3.00	—8.44	
Bute,	2	15	3	11	5	—1.6	3.96	4.00	4.23	
Caithness,	4	25	18	5	6	6.2	—2.72	—2.82	—4.34	
Clackmannan,	10	10	11	30	20	—7.0	10.71	8.14	10.72	
Dumbarton,	16	13	22	33	1	15.3	13.11	27.99	25.44	
Dumfries,	15	13	4	—1	7	—2.9	—1.41	1.78	—2.52	
Edinburgh,	21	29	15	2	16	5.6	19.85	18.51	11.56	
Elgin or Moray,	1	12	10	1	11	9.5	—0.45	1.53	—0.76	
Fife,	8	13	12	9	10	0.7	3.85	6.96	8.96	
Forfar,	8	6	23	22	12	6.8	16.21	12.12	4.23	
Haddington,	3	13	3	—1	1	3.4	0.36	1.94	—2.64	
Inverness,	7	16	5	3	—1	—8.5	—0.28	2.77	—1.26	
Kincardine,	4	6	8	5	5	—0.3	0.43	—0.43	3.43	
Kinross,	8	7	17	—3	2	—11.8	—9.77	—6.96	—6.23	
Kirkcudbright,	15	15	4	1	5	—1.4	—1.50	0.64	—5.03	
Lanark,	29	23	30	34	24	19.1	21.18	13.17	15.66	
Linlithgow,	9	17	3	15	12	28.2	6.00	6.21	21.37	
Nairn,	2	9	1	—1	8	1.0	1.59	2.25	—4.17	
Orkney and Shetland,	—1	15	10	5	2	2.4	—1.83	1.78	—3.31	
Peebles,	13	1	5	—1	2	6.4	3.03	12.10	6.79	
Perth,	7	3	3	—3	1	—3.8	—4.29	0.97	2.17	
Renfrew,	18	20	19	16	3	10.2	22.18	21.40	10.41	
Ross and Cromarty,	8	13	9	5	5	—1.5	—0.55	—2.97	—0.94	
Roxburgh,	10	10	7	5	12	4.7	—3.71	3.17	0.56	
Selkirk,	9	13	3	17	23	6.5	77.74	37.65	7.00	
Stirling,	14	12	11	13	5	6.5	6.84	14.43	11.71	
Sutherland,	2	1	7	—3	4	—2.1	—3.68	—3.89	—6.31	
Wigtown,	17	24	6	8	11	—3.0	—7.76	—0.56	—6.60	
Totals,	12	16	13	11	10	6.0	9.72	11.18	7.77	

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According to the census returns, which allow the country 19,062,482 statute acres, the average density of population has been raised from 125 persons per square mile in 1881 to 135 persons in 1891; or, in other words, while in 1881 each person on the average had 5'1 acres, this space was in 1891 reduced to 4'7

acres. Scarcely a fourth of the area is capable of cultivation, and owing to special social causes the population is less evenly distributed than physical conditions permit. The following table shows the disparity of population to area in the individual counties:—

1881.		1891.
Sutherland, Inverness, Ross and Cromarty, Argyll, Peebles.	} Counties with from 12 to 40 inhabitants per square mile.	Sutherland, Inverness, Argyll, Ross and Cromarty.
Kirkcudbright, Nairn, Perth, Shetland, Caithness.		Kirkcudbright, Perth, Shetland, Caithness, Nairn, Peebles.
Dumfries, Wigtown, Berwick.	} Counties with from 41 to 60 inhabitants per square mile.	Dumfries, Berwick, Wigtown.
Elgin, Roxburgh, Kincardine, Banff, Kinross, Bute, Orkney, Selkirk.		Roxburgh, Bute, Orkney, Kincardine, Elgin, Kinross, Banff.
Aberdeen, Haddington, Ayr.	} Counties with from 61 to 80 inhabitants per square mile.	Aberdeen, Haddington, Selkirk.
Stirling.		Ayr, Stirling.
Fife, Forfar, Linlithgow, Dumbarton.	} Counties with from 81 to 100 inhabitants per square mile.	Forfar, Dumbarton, Fife.
None.		Linlithgow.
Clackmannan.	} Counties with from 101 to 200 inhabitants per square mile.	None.
None.		Clackmannan.
None.	} Counties with from 201 to 300 inhabitants per square mile.	Lanark, Renfrew, Edinburgh.
None.		

The tendency of the people in all countries, on account of increasing industrial activity, is to gather into the larger towns. How this is affecting Scotland is evident from the following figures:—

	Population at Census.		Increase or Decrease between 1881 and 1891.	Percentage of Increase or Decrease.	Percentage of Population.	
	1881.	1891.			1881.	1891.
Towns—Pop. 2000 upwards,	2,306,852	2,631,298	+324,446	+14·06	61·75	65·37
Villages—Pop. from 300 to 2000,	447,884	465,836	+ 17,952	+ 4·01	11·99	11·57
Rural Districts,	980,837	928,513	— 52,324	— 5·33	26·26	23·06
Total,	3,723,573	4,025,647	+290,074	+ 7·76	100·00	100·00

It is thus seen that the principal towns have been growing at the expense of the rural districts. In various parts of Scotland, besides the deer-forest and sheep-pasture districts of the Highlands, the returning emigrant who visits the scenes of his childhood finds the little house which used to stand with its patch of garden at the corner of the croft reduced to a roofless ruin, or swept away altogether. And perhaps the

sole memento he can recover is a spray of honeysuckle or a sprig of rosemary still flourishing in the hedge-row or on the dyke side. But it is only in certain limited portions of the Highlands that the word depopulation can be applied. In Ross and Cromarty nearly every parish (with some notable exceptions, such as Stornoway) shows a considerable diminution in the thirty years 1861-1891. Thus:—

	1861.	1891.		1861.	1891.		1861.	1891.
Alness,	1178	1039	Edderton,	886	642	Kilmuir Easter,	1295	1024
Applecross,	2544	1786	Fearn,	2083	1900	Kiltearn,	1634	1301
Avonch,	1788	1817	Fodderty,	2247	1897	Kincardine,	1746	1417
Contin,	1509	1436	Gairloch,	5449	4181	Kintail,	890	588
Cromarty,	2300	2007	Glenshiel,	485	394	Knockbain,	2485	1667
Dingwall,	2412	2576	Killearnan,	1456	951	Lochalsh,	2413	1868

POPULATION.

As regards the numerical representation of the sexes the most noteworthy fact is, that there is still an excess of females in the country at the rate of 107·2 to every 100 males, though (with one exception) every census since 1811 (when there were 118·5) has shown a progressive diminution. Linlithgow is the only county in which at four successive censuses the males have considerably preponderated. The counties in which female excess is greatest are Shetland (135·53), Bute (124·14), and Forfarshire (121·50). This disparity appears only in the population overhead. On a division into age groups being made, it is found that from birth onward to 20 years the males outnumber

the females. After this age, and to the end of life, the females outnumber the males at each life period. In the previous census the number of males exceeded the females up to the age of 15 only. Of the males 66·344 per cent. are returned as single, 30·361 per cent. as married, and 3·295 per cent. as widowed; and the corresponding figures for the females are 63·141, 28·977, and 7·882 per cent. Even if we take the population above 15 years of age, 46·274 per cent. of the males and 44·223 of the females are unmarried.

The following table gives details concerning the births, deaths, and marriages for the country at large:—

Year.	Estimated Population.	Births.		Deaths.	Marriages.	Excess of Births over Deaths.
		Total.	Illegitimate.			
1855, . .	2,978,065	93,349	7,357	62,004	19,680	31,845
1856, . .	2,995,771	101,821	8,695	58,529	20,740	43,292
1857, . .	3,012,310	103,415	8,869	61,906	21,369	41,509
1858, . .	3,027,665	104,018	9,354	63,539	19,655	40,479
1859, . .	3,041,812	106,543	9,715	61,714	21,201	44,829
1860, . .	3,054,788	105,629	9,786	68,170	21,225	37,559
1861, . .	3,069,404	107,009	9,929	62,841	20,896	44,668
1862, . .	3,097,009	107,069	10,376	67,195	20,597	39,874
1863, . .	3,126,879	109,341	10,948	71,481	22,234	37,860
1864, . .	3,156,021	112,333	11,197	74,416	22,725	37,917
1865, . .	3,185,437	113,070	11,262	70,891	23,611	42,179
1866, . .	3,215,129	113,667	11,673	71,348	23,688	42,319
1867, . .	3,245,098	114,044	11,148	69,067	22,618	44,976
1868, . .	3,275,350	115,514	11,354	69,416	21,855	46,098
1869, . .	3,305,885	113,354	11,066	75,875	22,144	37,479
1870, . .	3,336,707	115,390	11,168	74,165	23,854	41,225
1871, . .	3,368,921	116,128	11,077	74,712	24,019	41,416
1872, . .	3,404,798	118,765	10,927	75,794	25,641	42,971
1873, . .	3,441,056	119,700	10,925	76,946	26,748	42,754
1874, . .	3,477,704	123,711	10,991	80,720	26,890	42,991
1875, . .	3,514,744	123,578	10,786	81,767	25,974	41,811
1876, . .	3,552,183	126,534	11,029	74,129	26,579	52,405
1877, . .	3,590,022	126,822	10,568	73,937	25,817	52,885
1878, . .	3,628,268	126,773	10,641	76,793	24,358	49,980
1879, . .	3,665,443	125,780	10,727	73,347	23,519	52,383
1880, . .	3,705,995	124,652	10,498	75,795	24,489	48,857
1881, . .	3,745,485	126,214	10,466	72,301	25,948	53,913
1882, . .	3,785,400	126,182	10,550	72,966	26,574	53,216
1883, . .	3,825,744	124,462	10,035	76,867	26,855	47,595
1884, . .	3,827,478	126,103	10,035	74,635	26,016	51,468
1885, . .	3,856,307	126,100	10,668	74,607	25,304	51,493
1886, . .	3,885,155	127,890	10,506	73,640	24,515	54,250
1887, . .	3,914,818	124,418	10,380	74,546	24,876	49,872
1888, . .	3,943,701	123,269	9,968	71,174	25,305	52,095
1889, . .	3,973,305	122,788	9,770	73,238	26,344	49,545
1890, . .	4,003,132	121,530	9,202	78,978	27,441	42,552
1891, . .	4,033,180	125,965	9,647	83,548	27,949	42,417
1892, . .	4,063,452	125,011	9,248	75,568	28,637	49,443
1893, . .	4,093,959	127,040	9,400	79,641	27,090	47,399

Turning from the country at large to the places where population is most densely massed, or, in other words, to the eight 'principal towns,' we find the growth in the 19th century often very striking:—

Towns.	Population.									
	1801.	1811.	1821.	1831.	1841.	1851.	1861.	1871.	1881.	1891.
Edinburgh, . .	81,404	101,492	136,351	186,548	192,977	160,302	221,846	198,903	236,002	263,646
Leith, . .				{ 25,855	25,984	30,919	34,488	44,721	59,485	68,707
Glasgow, . .	77,058	103,224	140,432	193,030	261,004	329,097	394,864	547,538	577,419	658,198
Aberdeen, . .	26,992	34,640	43,821	56,681	63,288	71,973	73,905	88,189	106,397	124,943
Dundee, . .	27,396	31,058	32,126	48,026	64,629	78,931	90,568	109,141	140,289	153,567
Greenock, . .	17,190	13,750	21,719	27,082	36,169	36,689	42,673	57,821	66,704	63,423
Paisley, . .	25,058	29,461	38,102	46,222	48,263	47,952	47,427	48,257	55,638	66,425
Perth, . .	16,388	16,564	18,197	19,238	20,407	23,835	25,293	25,606	28,980	29,919

EDUCATION.

As the death rate is an important indication of the comparative health of the different towns, we give its percentage to the urban population in more detail. The figures must not be taken as an absolute health-scale:—

Towns.	Percentage of Deaths to the Population.										
	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Glasgow, . .	2·82	2·69	2·53	2·43	2·23	2·12	2·36	2·38	2·53	2·27	2·33
Edinburgh, .	1·92	1·97	1·86	1·97	2·03	1·87	1·88	2·09	2·16	1·94	1·97
Dundee, . .	2·39	2·07	2·08	1·91	2·23	1·95	1·95	2·38	2·25	1·90	2·22
Aberdeen, . .	1·91	2·20	1·81	1·96	2·21	1·86	1·92	2·16	1·98	2·05	1·85
Greenock, . .	2·50	2·05	2·36	1·98	2·32	1·91	2·11	2·14	2·25	1·97	1·91
Leith, . . .	2·03	1·88	1·78	1·89	1·91	1·75	2·04	2·19	1·99	2·10	2·20
Paisley, . .	2·42	2·59	2·46	2·23	2·55	2·52	2·11	2·07	2·67	1·86	2·09
Perth, . . .	1·91	1·97	1·79	1·91	1·95	1·93	1·91	2·22	2·03	1·96	2·20

As 1,639,732 persons were added to the population of Scotland by excess of births between 1856 and 1891, the total population in 1891 ought to have been 4,617,797—2,978,065 being the figures assumed for 1855. But the census of 1891 returns only 4,025,647 persons, leaving 592,150 unaccounted for, who must consequently have removed from the country. Now, the actual number of persons of Scottish birth who are known to have left the United Kingdom for foreign parts during the period in question is 664,183, a strikingly near agreement, when it is considered that no record is kept of those who remove to England or Ireland. The following are the actual returns of emigration since 1856:—

While the numbers thus show a great increase in recent years, the proportion to the total of British emigrants remains almost unchanged. The following table shows that there has been an increase in the professional, the commercial, the industrial, and especially the domestic class at the expense of the agricultural:—

	1871.	1881.	1891.
Professional Class, . .	72,911	96,103	111,319
Domestic Class, . . .	159,403	176,565	203,153
Commercial Class, . .	114,694	132,126	180,952
Agricultural and Fish- ing Class,	270,008	269,537	249,124
Industrial Class, . . .	751,281	932,653	1,032,404
Unoccupied Class, . .	1,991,721	2,128,589	2,248,695

According to the census returns of 1811 and 1841 the ratios of the agricultural, commercial, and miscellaneous classes of the community were as follows:—35, 44, and 21 per cent. at the former date, and 22, 46, and 32 at the latter.

At the census of 1891 the mean number of persons in each family in Scotland was 4·59; the number of families to each House, 1·07; the number of persons to a house, 4·92; the number of persons to a room, 1·52; and the number of rooms to a house, 3·24. Of the population living in towns, 4·90 go to a house, 1·62 persons to a room, while each house has a mean of 3·02 rooms; in the villages there are 4·80 persons to a house, 1·55 persons to a room, each house having a mean of 3·09 rooms; and in the rural districts there is apportioned 5·05 persons to a house, 1·28 to a room, 3·95 being the average number of rooms in each house. The fewest number of rooms to each family is found in Clackmannan, 2·78; Orkney, 2·76; Forfar, 2·74; Linlithgow, 2·52; Lanark, 2·33; Shetland, 2·24; and the greatest number of persons to each room is in the counties of Stirling and Dumbarton, 1·64; Clackmannan, 1·65; Ayr, 1·66; Renfrew, 1·71; Linlithgow, 1·96; Lanark, 2·02; and Shetland, 2·03.

EDUCATION.

By W. SCOTT DALGLEISH, M.A., LL.D., F.E.I.S., author of *Memorials of the High School of Edinburgh*, *The Great Authors of English Literature*, *Periods of English History*, etc., etc.

SCOTLAND has long enjoyed the reputation of being one of the best educated nations in Europe. The claim to that character is certainly warrantable, even if it has regard to nothing more than to the systematic provision of educational institutions of all grades—primary, secondary, and university or higher. No other country in Europe possessed at so early a time so complete an equipment of educational machinery.

If we view the development of education in Scotland historically, we must give the first place to the univer-

sities, the second place to secondary schools, and the third place to the elementary school system. This is due to the fact that education was, in the first instance, the creation of the Church. Its primary object was the professional equipment of the priesthood. By and by the training of the sons of the barons, who formed the ruling class, was conjoined with that of the churchmen. The education of the people was a much later idea, and did not come into force until after the Reformation, in the beginning of the 17th century.

EDUCATION.

UNIVERSITY EDUCATION.—There are four universities in Scotland—those of St Andrews, Glasgow, Aberdeen, and Edinburgh. The first three were pre-Reformation universities, and were founded by Papal bull on the model of the schools of Italy. The University of Edinburgh and one of the colleges in Aberdeen were founded after the Reformation by Royal Charter. (See separate articles on the University towns.)

The University of St Andrews was founded in 1411 by the bishop of the diocese, who, with the help of King James I., obtained, two years later, a bull from Benedict XIII. In the 16th century it comprised three distinct corporations—St Salvador's College, St Leonard's College, and the College of St Mary. Its constitution has undergone various changes, but it now forms a single corporate body, including two colleges—the College of St Salvador and St Leonard, united in 1747, and devoted to arts and medicine; and the College of St Mary, devoted to divinity.

The University of Glasgow was founded in 1450 by bull of Pope Nicholas V. It now includes four faculties—Arts, Divinity, Law, and Medicine. New buildings were erected in 1868-70 at Gilmorehill at a total cost of £500,000.

The University and King's College of Aberdeen was founded in 1494, and sanctioned by Papal bull. The Marischal College and University of Aberdeen was founded in 1593 under a charter ratified by Parliament. The two colleges and universities were united in 1860.

The University of Edinburgh was founded in 1582 by James VI. It was put on an equality with the other universities of Scotland by an Act of the Scottish Parliament in 1621. Extensive additional buildings were erected in 1878-88 for the accommodation of the Medical Faculty. The Tercentenary Festival of the university was celebrated with great rejoicings in April 1884.

University College, Dundee, was founded and endowed by Miss Baxter of Balcavies and Dr John Boyd Baxter of Craigtay, Dundee, in 1881. There are ten professors, one of whom is principal. The college opened in 1883 with 300 students. The Commissioners, under the Universities Act of 1889, were instructed to affiliate University College, Dundee, to the University of St Andrews.

The strength of the teaching staff and the number of students and of graduates in the universities of Scotland in 1894 are shown in the following table:—

	Principal and Professors.	Lecturers.	Assistants.	Total Teaching Staff.	Students.	GRADUATES.					Total Graduates.	Members of General Council.
						In Arts.	In Medicine.	In Law.	In Science.	In Divinity.		
St Andrews, . . .	15	3	—	18	269	22	11	—	4	9	46	1474
Glasgow, . . .	33	10	20	63	1915	76	304	9	21	15	438	5129
Aberdeen, . . .	27	7	8	42	812	60	76	—	9	5	150	3520
Edinburgh, . . .	41	17	32	90	3064	88	309	12	35	9	453	7700
Dundee, . . .	9	7	6	22	151	—	—	—	—	—	—	—
Total, . . .	125	44	66	235	6211	246	700	21	69	38	1087	17,823

The constitution of the Scottish Universities was remodelled by Act of Parliament in 1858, which appointed an Executive Commission to carry out its enactments in detail. It created in each university two bodies, in addition to the Senatus Academicus, to regulate its affairs—the University Court, a body of from six to eight members, which is the highest authority in the university organization; and the General Council, which consists of the registered graduates in all faculties. The official head of each university is the Chancellor, who is elected for life by the General Council. The chairman of the University Court is the Rector, who is elected for a term of three years by the matriculated students. The administrative body is the Senatus Academicus. In the University of Edinburgh there is also a Court of Curators, which dispenses the patronage formerly exercised by the town council of the city.

The Universities Act of 1889 effected further changes in the university constitution. It enlarged the University Courts, and transferred to them the control of the finances, thus making the Court the supreme governing body in each university. It empowered the universities to admit women as students and as graduates, provided for the affiliation of extra-mural colleges, and invested an executive commission with extensive powers affecting the payment of professors and lecturers, the institution of new chairs and faculties, and the regulation of courses of study and graduation.

The Parliamentary Reform Act of 1867 gave two members to the Scottish Universities—the one to Edin-

burgh and St Andrews, the other to Glasgow and Aberdeen. The electors are the members of the General Councils.

University Education of Women.—In St Andrews and Edinburgh male and female students meet in the same class-rooms, and are admitted to the same degrees (in St Andrews) in the faculties of arts, science, medicine, and theology; in Edinburgh, in the faculties of arts and science only. In Glasgow, the female students are taught separately in Queen Margaret's College, which has a staff of twenty-nine professors, and its students are reckoned as students of the university, and are admitted to its degrees in arts and medicine.

Degrees.—The degrees conferred by the Scottish universities are those of Master of Arts (M.A.), Bachelor of Law (B.L.), Bachelor of Laws (LL.B.), Doctor of Laws (LL.D., honorary), Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Science (B.Sc., in various departments), Doctor of Science (D.Sc.), Doctor of Philosophy (D.Phil.), Doctor of Letters (D.Lett.), Bachelor of Divinity (B.D.), Doctor of Divinity (D.D., honorary).

Extra-Mural Schools.—In Edinburgh and in Glasgow university students of medicine may take a certain proportion of their qualifying classes in extra-mural schools under certain conditions. The Edinburgh Medical Schools have a staff of fifty-seven teachers, approved by the University Court.

Theological Education.—Theological education is

overtaken to a large extent in denominational colleges. The Chairs of Divinity in the universities are filled only by clergymen of the Established Church. The Free Church has three colleges—in Edinburgh, in Glasgow, and in Aberdeen. The United Presbyterian Church has a college in Edinburgh. The Congregational Church also has a divinity hall. The Baptists have a theological institution in Edinburgh. The Scottish Episcopal Church has a college in Edinburgh, established in 1877. Trinity College, Glenalmond, in connection with the same body, was founded in 1841. The Roman Catholic Church has a college at Blairs, Aberdeen, established in 1829. The B.D. degree is open to students of the denominational colleges, but they must either be graduates in arts or have been students for two years in the university in which they graduate in divinity.

Professional Licences.—Besides the university degrees in medicine, professional licences are granted by the Royal College of Physicians and the Royal College of Surgeons of Edinburgh, and by the Faculty of Physicians and Surgeons of Glasgow. Schoolmasters are not required by law to possess any academic degree or professional licence, but they derive certain advantages from possessing the university degree of M.A., and some of the universities grant a schoolmaster's diploma. The Educational Institute of Scotland, a chartered body, has the right to confer the title of Fellow (F.E.I.S.).

Independent Colleges.—St Mungo's College, Glasgow, has twenty-three professors in the faculties of law and medicine, and the Anderson's College Medical School, Glasgow, has sixteen professors. It has also classes in mechanics and literature. The Heriot Watt College, Edinburgh, is a technical school, with a staff of sixty lecturers and teachers. The School of Medicine for Women in Edinburgh has twenty-six professors, and the Medical College for Women has twenty professors. There are also special schools for dentistry, for veterinary science, and for agriculture. Schools of science and art in connection with the South Kensington Science and Art Department have been established in Edinburgh, Glasgow, and all the leading towns of Scotland.

Local examinations, similar to those of Oxford and Cambridge, have been instituted by all the four Scottish universities.

SECONDARY EDUCATION.—After the universities, secondary education comes next in point of time. Some authorities hold that there were secondary schools in Scotland before there were universities. A school in connection with the church of St Andrews is referred to in ecclesiastical statutes of the year 1120. After that date there are frequent references to schools in connection with abbeys and cathedrals. But the earliest legislative enactment on the subject was the statute of 1496 (James IV.), requiring all 'barons and freeholders of substance' to send their eldest sons to school, and to keep them at school until they were 'completely founded,' and had 'perfect Latin,' as well as a knowledge of art and 'jure,' or law. If there had not been schools in existence giving the education specified the statute would not have been passed. That the schools were secondary schools is implied, both in the subjects prescribed and in the social class on which the obligation was laid. It was no doubt the primary aim of these schools to train juvenile ecclesiastics, but it was natural that the sons of barons and freeholders who wished to learn should be received along with these. It was the object of the statute of 1496 to enjoin this attendance on the part of secular students destined for the public service, but it is not known how far the injunction was observed.

At the beginning of the 16th century there existed grammar schools, or Latin schools, of some repute in many of the burghs of Scotland. After the Reformation, these schools passed into the hands of the town councils, and were in some cases helped with an annual grant from the 'common good' of the burgh. The establishment of a 'Latin school' beside every several kirk 'in towns of any reputation,' and of a 'college for logic, rhetoric, and the tongues' in every 'notable town,' was part of the comprehensive scheme propounded in the First Book of Discipline (1560). If the scheme had been carried out, Scotland would have had a system of secondary schools as complete as her parochial school system. But it was not carried out, being only a recommendation of the Church, and not an Act of Parliament. The cupidity of the nobles deprived education of much of the forfeited revenues which the reformers had destined for its support. The point in which failure was most conspicuous was the establishment of colleges or high schools in 'notable' towns. That is the particular in which Scottish education has always been most defective. Nevertheless, town councils were usually zealous in supporting the burgh schools. They frequently guarded them by a system of 'protection,' which prohibited adventure schools, or which forbade the burghers to send their children to any but the authorised school of the burgh. In 1867 the number of schools returned as 'burgh schools' to the Education Commissioners of that year was twenty-six. When the Act of 1872 passed, only eleven schools were scheduled in it as 'higher class public schools.' The number has now been increased to twenty-three.

The Education Act of 1872 included burgh as well as parochial schools. That is one of the features of the Act that distinguish it most clearly from the English Act of 1870, which related only to primary schools. But the Act of 1872 embraced burgh schools only formally and in a left-handed way. It transferred the management of the schools, including the appointment of teachers, to the School Boards, but it expressly forbade the participation of these schools in the school fund, excepting for the maintenance of buildings and for the expenses of examinations. These provisions of the Act of 1872 were enlarged by the Act of 1878, which authorised School Boards to pay from the school fund, with the consent of the Education Department, such expenses for the promotion of efficient education as were not provided for in the principal Act. The amending Act also empowered School Boards to pay for new school buildings, and authorised the Department to make provision for the examination of higher class public schools and of secondary schools under private authorities. The burgh and grammar schools under the management of School Boards provide a very small part of the secondary education of the country. In all the larger towns there are adventure schools, generally well conducted, and in some there are proprietary schools and endowed schools which provide efficiently for the higher education.

In 1886 the Education Department undertook the duty of inspecting and reporting on secondary schools—not only endowed schools and higher class public schools, but also proprietary and other private schools which were willing to submit to the ordeal. Two years later the Department instituted a system of examinations for Leaving Certificates, of which all the best secondary schools in the country took advantage. In 1893 these examinations were opened to the scholars in the higher departments of elementary schools.

Under the Education and Local Taxation (Scotland) Act of 1892 a sum of £57,000 a year was set apart for the support of secondary education, and in the following year, under a Minute of the Department, Burgh and

County Committees were appointed which were authorised to submit schemes for the distribution of the grant. In most cases the larger portion of the grant was applied to the institution of scholarships in secondary schools for the benefit of scholars in elementary schools.

A Technical Schools (Scotland) Act was passed in 1887, but it has, so far, been taken advantage of to a very limited extent. The Local Taxation (Customs and Excise) Act of 1890 empowered county councils to contribute to the support of technical education, and an annual sum of £48,000 has been so applied.

Endowed Schools.—The educational endowments of Scotland were found by the Royal Commissioners of 1872-75 to yield an annual income of £175,000. This sum included £79,000 for hospitals which are mainly secondary foundations, and £16,000 for schools which are purely secondary. The rest was for mixed endowments. In 1882 an Act was passed to reorganise the educational endowments of Scotland by means of an executive commission. The commissioners issued schemes remodelling governing bodies, and rearranging the administration of revenues, with the view of making the funds available, after fairly satisfying the primary objects of the donors, for the promotion of the higher education of boys and girls. The commission remodelled the foundations that were left intact by the Endowed Institutions Act of 1869. It abolished the 'monastic system' in connection with such Edinburgh foundations as George Heriot's Hospital, Donaldson's Hospital, John Watson's Institution, the Orphan Hospital, and the Trades Maiden Hospital. Heriot's Hospital is a typical case. The trust has an income of £25,000 a year, the bulk of which used to be expended on the maintenance and education of 180 resident foundationers. The commissioners abolished the residence of foundationers and converted the hospital into a great day-school, chiefly technical and scientific, which is attended by some 950 day-scholars who pay moderate fees, while the board of the foundationers is adequately provided for. At the same time a sum of £4000 a year is applied in aid of the Heriot-Watt College, a day and night technical and scientific school attended by upwards of 3000 young men and women. The constitution of the governing body was also enlarged, so as to include representatives of the Town Council, the School Board, the City Ministers, the University, the Royal Society, and the Chamber of Commerce. The schools under the management of the Merchant Company of Edinburgh were remodelled in 1870, under the Endowed Institutions Act of 1869. They include four secondary schools (two for boys and two for girls) and an elementary school for boys and girls. The scholars (partly foundationers and partly non-foundationers, who pay moderate fees) number 6000.

The Science and Art Department of the Committee of Council on Education allows annual grants in aid of the teaching of science and art in secondary schools, and also for the teaching of drawing and manual exercises in elementary schools. The grants for direct payments, prizes, apparatus, etc., amount in Scotland to nearly £30,000 a year.

ELEMENTARY EDUCATION.—The first great impetus given to popular education in Scotland came from the Reformers, who saw that the strength of their movement lay in the enlightenment of the mass of the people. Hence, the scheme of the First Book of Discipline already referred to. One of its chief features was the recommendation to plant a school for 'the first rudiments' of learning in every rural parish. Probably that part of the scheme would have borne as little fruit as that relating to secondary schools, but for an Act of the Privy Council in 1616, ordaining the establishment

of a grammar school in every parish, and requiring the heritors to support it. This Act was ratified by the Parliament of 1633—the year in which Charles I. visited Scotland and established Episcopacy—which empowered the bishops, with consent of the heritors, to exact a tax for the support of education. The ecclesiastical and political troubles of the next half century hindered the operation of this enactment. The Revolution settlement of 1689 brought a measure of peace. Its effect was seen in the statute of 1693, which restored the authority of the Presbyterian Church in matters educational.

Then came the famous Act of 1696, which has been justly described as 'the Charter of Scottish education.' That Act recast the system of popular education. It required the heritors in every parish in the land to provide a suitable schoolhouse, and a salary for the teacher of at least 200 merks, or about £11 a year; but it retained the authority of the Church by authorising the presbytery of the bounds, in case of default, to provide the schoolhouse and the schoolmaster's salary at the cost of the heritors. To this Act Scotland owed the system of parish schools, spread over the length and breadth of the land, which made the Scottish peasantry famous for intelligence and enterprise, and which raised Scotland to the front rank of educated nations. It was, of course, chiefly in the Lowlands and in the centres of industry that its beneficial effects were felt; but even in the Highlands, in spite of the disturbance caused by successive Jacobite rebellions, it exercised a humanising influence, and bore a fair measure of good fruit.

No further attempt to improve Scottish education was made till 1803, when an amending Act was passed by the Imperial Parliament, increasing the salaries of schoolmasters, and assigning to them dwelling-houses and gardens. But the school was still regarded as an adjunct to the Church, and the schoolmaster continued to be the vassal of the parish minister and the Presbytery, and was required to sign the Confession of Faith.

The Commission of 1818 revealed a lamentable state of educational destitution, especially in the Highlands, although the Society for Propagating Christian Knowledge had been doing good work since its institution in 1704. The Church made strenuous efforts to remove the reproach that lay on the country. The General Assembly's Committee on Education was appointed in 1824, and established schools in many destitute districts. These efforts, however, were quite inadequate to meet the needs of the country; and the Church gladly availed itself of the system of Grants in Aid established in 1839, which proved to be the point of the wedge of State education in Scotland as well as in England.

The Disruption of 1843 in the Church of Scotland greatly increased the number of schools in the country. The Free Church resolved to provide schools of its own, partly to give employment to the extruded schoolmasters, partly that its people might not require to send their children to the parochial schools, which were attached to the Established Church. The movement had its origin in ecclesiastical rivalry, rather than in a desire to supply educational deficiencies. It resulted, therefore, in producing educational redundancy, as well as in increasing sectarian bitterness. The first loosening of the tie between the parochial schools and the Church took place in 1861, when an Act was passed transferring to the Scottish Universities the examination of parochial teachers, previously entrusted to Presbyteries. The Act also modified the ecclesiastical test, and thereby opened the office of parochial schoolmaster to members of all the Presbyterian Churches. At the same time it raised the minimum salaries of teachers to £35 a year, and the maximum to £70.

EDUCATION.

The report of the Commission of Inquiry, published in 1867, emphasised the deficiencies which had been previously discovered or suspected, and revealed others. One-fifth of the children of school age were not at any school, and only one-half of those at school were at inspected schools. In most cases the attendance was very irregular. The country was evidently ripe for a complete system of national education. Abortive attempts to deal with the question were made in 1852, 1869, and 1871. At last the great measure of 1872, with which the name of Lord Young is honourably associated, was passed, and a new era opened in the Educational History of Scotland.

The distinguishing feature of the Education Act of 1872 was its thoroughness. It did not seek merely to amend, or to supplement, the system previously in existence. With some minor exceptions to be noted presently, it either absorbed or swept away the existing machinery, and established a new and complete system in its place. The exceptions referred to did not interfere with the essential characteristics of the new organisation, which were, universal School Boards, a universal school rate, and universal compulsory attendance. Under the Act, a School Board, elected every three years by the ratepayers, female as well as male, is established in every parish and burgh in the country. Each Board is the responsible educational authority in its own district. It is the primary duty of the Board to provide an adequate supply of school accommodation. The Board manages the schools, appoints the teachers, who hold office at its pleasure, and regulates the course of instruction; and it is answerable to its constituents, the ratepayers, alone for the manner in which it discharges these duties. The School Board is thus a popular and representative institution, and is a notable instance of local self-government. The Board is empowered to levy an assessment on the rental of the parish or the burgh, called the school rate. The primary sources of school revenue are the Fee Grant, Voluntary Contributions, and the Government Grant. Whatever deficiency is found to exist in the expenditure, when these sources of revenue are exhausted, must be made up from the school rate. The rate is therefore a variable quantity. It varies from 3d. and 4d. in the £ in populous and favoured burghs, to 4s. and 5s. in remote parishes in the Highlands and Islands. The average for Scotland in 1892-93 was 7-3d. per £.

Compulsory attendance is universal in Scotland. The corner-stone of the Act of 1872 is the requirement that 'It shall be the duty of every parent to provide elementary education in reading, writing, and arithmetic for his children, between five and thirteen [altered by a subsequent Act to *fourteen*] years of age.' The rule, however, admits of exceptions in the case of children over ten years of age who hold an Inspector's certificate of proficiency, and of half-timers under the Factory and Workshops Acts, and the Mines Regulations Act. The School Board ascertains, through its 'compulsory officer,' what children of school age are not at school, and prosecutes the parents, who may be punished by fine or by imprisonment.

Religious instruction is given under the check of a conscience clause, which requires that instruction to be given at specified times, and which allows a parent to withdraw his children from school during these hours. In this connection, notice may be taken of the exceptions to the thoroughly national character of the system, already referred to. The Act allowed denominational schools to be continued, and to receive the Government Grant, if the Education Department was satisfied that the character of the population in any district rendered this necessary.

The denominational schools now play a very small

part in the education of the country. In 1893, of a total of 3105 schools, only 314 were denominational schools, while 2679 were Board schools, and 112 were undenominational and other schools not under School Boards. In the same year, of a total of 563,286 scholars in average attendance, only 65,986, or 11·7 per cent., were in denominational schools. The only denominational schools that have increased in number since the passing of the Act of 1872 are those of the Episcopal Church and the Roman Catholic Church. That is due to the fact that, under the 'use and wont' clause in the preamble of the Act, the Board Schools are practically Presbyterian.

By the Secretary for Scotland Act (1885), a Scotch Education Department was reconstituted, separately from that for England, with the Scottish Secretary as Minister of Education, and with a permanent Secretary and other officials, having their offices at Dover House, Whitehall.

The Scotch Code regulates the distribution of the annual Parliamentary Grant, which amounted, for Scotland, to £652,056 in 1895. Payments are made—(1) on attendance; (2) on the quality of the teaching; (3) on class examination in English History, Geography, Needlework, Manual work, and Elementary Science; (4) on individual examination in specific or higher subjects—Mathematics, Latin, Greek, French, German, Navigation (boys), Agriculture (boys), and Domestic Economy (girls). Special grants are also made for Cookery, Laundry-work, and Dairy-work, for blind and deaf-mute children, for small schools in thinly peopled districts, for schools in the Highlands and Islands, for pupil teachers, and for assistant teachers.

Under the Local Government (Scotland) Act of 1889, Scotland's share of the Probate Duty Grant was applied in relief of fees in elementary schools. That and subsequent Acts have made education free to all children between three and fifteen years of age in the public schools in Scotland. In 1892 the several grants for that purpose were consolidated in a Parliamentary Grant proportionate to the Fee Grant made to English schools; this proportion in 1894 amounted to £286,000. Added to this grant there is a variable sum available under the Education and Local Taxation (Scotland) Act, 1892, which in 1894 amounted to £10,357. The total Government Subsidy in aid of elementary education amounts to £942,924.

The other sources of income were as follows in 1894:—

The School Rate,	£296,045
Voluntary Subscriptions,	29,188
County Committees for Secondary Education,	10,030
Endowments,	18,997
School Pence,	49,604
Other Sources,	9,526

£413,390

Government Subsidy, as above, 942,924

Total Expenditure on Elementary Education, at least, £1,356,314

The Education Act of 1872 gave a great impetus to education all over the country, the most satisfactory outward sign of which was seen in the substantial and handsome new school-houses which adorn every burgh and every parish even in remote districts. Since 1872, 980 new school-houses have been erected, 370 old school-houses have been enlarged or improved, and 766 teachers' residences have been built, at a cost of £2,675,838, the whole of which has been borne by the rates, excepting £577,955 which came from Government Grants. There are 979 School Boards in Scotland—921 in parishes and 58 in burghs.

EDUCATION.

In 1894 the capitation grant paid by Government in relief of fees was at the rate of 12s. a year. The number of scholars between 5 and 14 years of age on the registers of schools in that year was 661,588. The fee grant was paid on account of all these excepting the scholars in fee-paying schools and in schools not claiming the grant. These amounted only to 23,381, so that relief was granted in the case of 638,207 scholars under 14, while many School Boards and managers had abolished fees beyond the limit of 14 years. In 1894 the age limit was extended in both directions, 3 to 15 being substituted for 5 to 14. The introduction of free education has had a marked effect in increasing the average attendance. The percentage of scholars on the registers who were in average attendance in 1889 (before free education was granted) was 77·6; in 1894 it was 82·6. That is probably a higher percentage than can be shown by any other country in the world. It should be added, however, that all the children of school age in Scotland have not yet been brought into the schools. Accommodation has now been provided for 94 per cent. of the children of school age; but only 84 per cent. are on the registers, and 69 per cent. are in daily attendance.

The following table shows in a succinct form the progress made in school supply, in school attendance, and in other particulars during the years from 1874 to 1884, and from 1884 to 1894:—

	1874.	1884.	1894.
Schools inspected, . . .	2,366	3,131	3,004
Scholars provided for, . .	372,090	655,672	770,244
Scholars on registers, . .	344,628	587,945	686,335
Scholars in average attendance,	263,748	448,242	567,442
Scholars examined in higher subjects, . . .	4,407	61,429	47,332
Certificated teachers, . .	3,165	6,220	8,637
Assistant teachers, . . .	66	1,012	1,947
Pupil teachers,	3,833	3,629	3,938

It will be noticed that, while the number of scholars has increased greatly since 1884, the number of schools has diminished. This is explained by the fact that in many cases, particularly in large cities like Edinburgh, Glasgow, and Dundee, one large school, with accommodation for 1000 and 1500 scholars, has taken the place of a number of small schools, accommodating only from 300 to 600 scholars. Many of these large schools are magnificent buildings, well furnished, well ventilated, and thoroughly appointed in every respect.

Evening Continuation Schools.—In 1893 the title of 'Night Schools' gave place to that of 'Evening Continuation Schools,' and a special code was issued for them, greatly enlarging the course of study, prominence being given to teaching of the duties of citizenship, to natural science, and to technical education. The change led to a marked improvement in the attendance. The average attendance of scholars above twelve years of age was in 1894 nearly 33,000, earning a grant of about £33,000.

Inspection.—There are in Scotland twenty-five inspectors of schools, of whom three are chief inspectors. There are four sub-inspectors and twenty-two inspectors' assistants. Each chief inspector reports every year, and includes in his report the views of the district inspectors, and also those of the sub-inspectors and the assistants on special points.

Training of Teachers.—There are seven Training Colleges for teachers in Scotland, all connected with ecclesiastical denominations—three of these being in connection with the Established Church, three of them

with the Free Church, and one with the Scottish Episcopal Church. The number of students in training at these colleges in 1893-94 was 885—300 male and 585 female; and the Government Grant amounted to £32,300.

In 1876 chairs of the theory, practice, and history of education were founded in the universities of Edinburgh and St Andrews by the trustees of Dr Andrew Bell, the founder of the Madras or Monitorial system. A Lectureship on education has been recently instituted in the universities of Glasgow and Aberdeen. Under the Scotch Code, students in training colleges (Queen's scholars) may attend a Scottish university during their two years of training, and the authorities of the training college may dispense with their attendance there during such hours as they may deem necessary. The classes of education in Edinburgh, St Andrews, and Aberdeen are recognised under this section of the code. The number of Queen's scholars availing themselves of this privilege rose from 33 in 1874 to 146 in 1893. The code of 1895 instituted a new order of Queen's students, who may receive the whole of their training in a university or a college.

Scholastic Organisation.—The chief body for the protection of the interests of members of the scholastic profession is 'The Educational Institute of Scotland,' instituted in 1847, and incorporated by Royal Charter in 1851. Its membership includes teachers, both male and female, of every grade, from teachers in elementary schools to university professors. A 'Burgh and Parochial Schoolmasters' Widows' and Children's Fund' was established by Act of Parliament in 1807. There is also an Association of Teachers in the Secondary Schools of Scotland.

Authorities.—The Minutes of the Committee of the Privy Council on Education, from 1839; the Annual Blue Books of the Scottish Education Department; the Report of the Commission of Inquiry, 1867; the Reports of the Board of Education for Scotland, 1874-78; the Report of the Universities Commission, 1837; the Report and Ordinances of the Universities Commission, 1858; the Report of the Universities Commission, 1878; the Ordinances of the Universities Commission, 1889; the Report of the Endowed Institutions Commission, 1869; the First Report of the Educational Endowments Commission, 1884; James Grant's *History of the Burgh Schools of Scotland*, 1876; Sellar's *Manual of the Education Acts*, 7th edition, 1879; Craik's *Education and the State*, 1883; Cassell's *Educational Year Book*, 1881-84; Sir J. Kay Shuttleworth, *On Public Education*, 3 vols., 1853; H. Mann, *Education in Great Britain*, 1854; J. S. Blackie, *On the Advancement of Learning in Scotland*, 1855; J. Lorimer, *The Universities of Scotland, Past, Present, and Possible*, 1854; Voigt, *Mittheilungen über das Unterrichtswesen Englands und Schottlands*, 2nd ed., 1863; Sir Alexander Grant's *Story of the University of Edinburgh*, 1884; Harrison's *Oure Tomis Colledge; Sketches of the History of the Old College of Edinburgh*, 1884; the Calendars of the Scottish Universities; S. S. Laurie's *Primary Instruction in Relation to Education*, 3rd edit., 1883; J. M. D. Meiklejohn's *Life of Andrew Bell*, 1881; Steven's *History of the High School of Edinburgh*, 1849; Steven's *History of George Heriot's Hospital*, continued by F. W. Bedford, 1859; Dalgleish's *High School of Edinburgh*, 1857; George Combe's *Education: Its Principles and Practice*, edited by W. Jolly, 1869; *The Museum: a Journal of Education*, 1862-69; George Combe's *Discussions on Education*, 1894; John Edgar, *History of Early Scottish Education*, 1893.

HISTORY.

By WILLIAM MELVEN, M.A.

THOUGH Scotland, in its modern extent, had in reality no existence till the long War of Independence, and some parts of the realm were not firmly united to the main body till later dates, it will be convenient to employ the name as if it had at all times signified the whole territory meant when the word is now used. Taking it in this sense, the earliest inhabitants of the country of which we have any trace belonged to a non-Aryan race resembling the Iberians and the Aquitani, short in stature, with long heads—the extra length being occipital—dark hair, and dark skin (*Dolichocephalic Melanochroi*). Latterly, at all events, they used polished stone implements, lived in caves, and buried their dead in caves and chambered tombs. Their typical Continental representatives are the Basques; and in Great Britain their descendants, but little altered in appearance, may still be found in the small, dark-haired, black-eyed natives of Wales, of the North-West Highlands, and of Ireland west of the Shannon. Long, however, before we have any historic notice of the country, these early inhabitants had been pushed away to the more inaccessible and mountainous districts to the west and north by the incoming of a Celtic Aryan race, Gaidhels (Gaeles) or Goidels, from whom are descended the great mass of the Gaelic-speaking inhabitants of Ireland, the Isle of Man, and the north of Scotland, and these, in their turn, had been subjected to the same process of pressure to the west and north by a fresh wave of Aryans, Britons or Brythons, Celts also, but speaking a different dialect, which is now represented by the language spoken in Wales. The first invaders were probably, though it is little more than a matter of supposition, bronze users, and the second, tribes who had found out how to make iron. They buried their dead in round barrows. Physically, both races would seem to have resembled one another, and to have been tall, fair-haired, blue-eyed, with round heads and rugged features (*Brachycephalic Xanthochroi*).

Historically, the first mention of Great Britain seems to take place about 330 B.C., when Pytheas, a celebrated mathematician of Marseilles, in the course of a long voyage of discovery undertaken at the request of some merchants of Marseilles who wished to extend the trade of the port, visited the north-east of Scotland as well as the south-east of England. But such fragments of his writings as now remain deal more with the latter part of the country, so that the first authentic written notices of Scotland must be considered to be those in Latin authors subsequent to A.D. 70, when, part of England having, under the Emperor Claudius, twenty years before, become a province of the Roman Empire, the territories of the Brigantes became subject to the Roman power. Space is here wanting for a particular account of the whole of these scattered and often very brief notices, and all that can be attempted is a very condensed account as to the results to which they lead.

When the Romans reached Britain, they must have found the country divided only among the three races already mentioned, for though the Belgæ held part of the south of England, this branch of that race seems to have belonged to the purely Celtic portion of it, and not to that in which there was an admixture of German blood. The Belgic element probably did not extend far northwards in England, and certainly never found its way into Scotland. Some authors, founding on the passage in Tacitus' *Agricola* where he says, '*Rutilæ Caledoniam habitantium comæ, magni artus, Germanicam originem asseverant*,' have maintained that there were also in the latter part of the first century settle-

ments of Germans to the north of the Forth, but it is now accepted as true that in physical characteristics the Celts or Gauls and the Germans closely resembled one another, and the only inference that can be drawn from the passage is that the particular tribe referred to by Tacitus in the words quoted were men of better physique and brighter-coloured hair than those he had come in contact with farther to the south. The Brythons occupied in Scotland the district from the Border northward along the east coast and across the Firth of Forth to the line of the Fife Leven and the upper waters of the Earn. Westward their boundary was the southern half of Loch Lomond and the river Leven down to the Clyde, and then the Clyde and the Firth of Clyde till about Ayr, where the line turned back eastward along the watershed between the Nith, Annan, and Esk on the south, and the Clyde and Tweed on the north. Of this territory the part along the upper waters of the Tweed seems to have belonged to the Brigantes proper, and the portion along the east coast from about Edinburgh to the Tweed to a sub-section of them known as the Otadini, whose possessions also crossed the Border. All the rest of the Brythonic territory was held by a tribe known as the Damnonii or Dumnonii. The portion of the country to the south-west of the Brythons in the modern counties of Wigtown, Kirkcudbright, and Dumfries belonged to the Goidels, whose possessions extended also round the head of the Solway Firth and along the west coast of England as far as Morecambe Bay. They were divided into the Selgovæ in the north—whose name is supposed still to survive in the name of the firth—and the Novantæ in the south. The Goidels also practically held the whole of the district from sea to sea between the northern boundary of the Damnonii and the Mounth, while the older races who held the territory between the Mounth and the Moray Firth had become so mixed with them as to be practically Celtic in everything but origin. To the north of the Moray Firth and the west of the Great Glen the pre-Celtic Iberians had probably retained more of their native customs, but they were so dominated by the power of their Celtic neighbours, that they must have at least spoken some form of the Celtic dialect, the greater number of place-names now remaining being undoubtedly Celtic as far north as Sutherlandshire—the non-Celtic names in a portion of that county and in the greater part of Caithness being of much later date. The positions and names of the tribes, as far as can be made out from Ptolemy and other sources, were the Epidii in Kintyre and along the west coast as far as Ardnamurchan—the district including a considerable number of inhabitants of Iberian descent; the Caledonii from Bute northwards to the Inverness Basin and Beaulieu Firth; the Vacomagi from the upper waters of the Earn northward to the Inner Moray Firth; the Vernicones along the east coast from the Firth of Tay to the river Dee; the Taexalli between the Dee and the Deveron; the Decantæ from the west side of Loch Ness to the Dornoch Firth; the Lugii in the centre and east of the modern county of Sutherland; the Smertæ along the east coast of the modern Caithness; the Cornavii along the north coast of Sutherland and Caithness, and possibly also the Orkneys, though there may have been there another tribe whose name is unknown; and a tribe known as the Cerones, Creones, Carnonacæ or Carini, all along the west coast from Cape Wrath to Ardnamurchan, and possibly also in the Inner and Outer Hebrides. The Selgovæ seem to have had a considerable admixture of the pre-Celtic race among them, and they and the Novantæ appear later as Genunians, later

still as the *Atecoti*, and finally as the *Picts* of Gallo-way. The *Vernicomes* seem to be the same as the *Meatæ*; and the Goidelic portion of the *Caledonii*, *Vacomagi*, and *Vernicomes*, south of the Mounth, are probably the *Caledonii* of *Tacitus*. After the construction of the so-called *Antoninus' Wall* between the *Clyde* and the *Forth* the *Damnonii* were cut in two, and the portion of the tribe to the north as well as the inhabitants of *Fife* were probably the body that subsequently appears as the *Horestii* or *Borestii*, again as the *Vecturiones* or *Verturiones*, and finally as the *Men of Fortrenn*.

We have already seen that the *Brigantes*, the greatest and most powerful tribe of the *Brythons*, were finally reduced to subjection in A.D. 70, the conquest being effected by *Petilius Cerealis* under the Emperor *Vespasian* after a severe and bloody contest; and thus part of the south of Scotland became part of the Roman Empire. Before *Petilius* was, however, able to consolidate the newly acquired dominion, he was succeeded by *Julius Frontinus*; and as all his attention was given to a war against the *Silures* in *Wales* no fresh action in the north was taken till A.D. 79, when *Agricola*, who had now assumed the chief command in Britain, led his forces northward and constructed stations in the *Brigantian* territory, while in the following year he penetrated the territory of the *Selgovæ*, and, passing northwards by *Lanarkshire*, subdued the *Damnonii* to the south of the *Firth of Clyde*, and seems to have pushed on by *Stirling* as far as the *Firth of Tay*; but whether he spent the winter in advanced positions beyond the *Forth*, or retired to the south side for winter quarters, seems somewhat doubtful, probably the latter. At all events the summer of 81 seems to have been spent in constructing a chain of forts across the neck of land between the *Firths of Forth and Clyde*, so as to protect the greater portion of the newly acquired territory from the incursions of the northern tribes. In 83-86 he again advanced to the north, and though in the last year he gained a great victory at *Mons Grampius*, probably near the junction of the *Isle* and the *Tay*, he was unable to follow up his victory, and re-crossing the *Tay*, returned southward, while the fleet sailed onward round the north. *Agricola* was recalled in 87, and under his successors the district north of the *Forth and Clyde* again regained independence, while during the next thirty years even the country to the south seems to have become practically independent, for when *Hadrian*, in 120, visited Britain, he considered that the northern limit of Roman power should be drawn back to a line between the *Solway* and the *English Tyne*, and so formidable does he seem to have considered the attacks likely to be made from the north, that he erected along the border a massive stone wall, strengthened by a ditch on its northern side, and an earthen rampart on the south, with stations, castles, and watch-towers. In the reign of *Antonine*, however, in 139, *Lollius Urbicus*, who had been sent for this special purpose, again reduced the tribes to the north of *Hadrian's Wall*, and constructed a massive earthen rampart between the *Firths of Forth and Clyde*, probably along the line of *Agricola's* chain of forts. Formidable as this defence was, the northern tribes broke through it in 182, and were not finally driven back till two years later. A fresh outbreak in 207 drew the Emperor *Severus* himself to the scene of contest, and in 208 he arrived in Britain, and marching north with a large army, pushed vigorously forward, clearing and forming roads and bridging rivers, so as to render the whole territory of the hostile tribes more accessible at all future times. He penetrated as far as the *Moray Firth*, and though he fought no pitched battle, he is said to have lost an immense number of men, partly in consequence of hardship, and partly through the tactics of the natives, who

harassed his army continually. His operations were so far successful that he compelled the *Caledonii* and *Meatæ* to make peace and to give up some territory north of the rampart formed by *Lollius Urbicus*, to which *Severus* now added an immense ditch on the northern side, as well as additional posts; but he had hardly returned to *York* when a fresh outbreak took place, and a war of extermination was only prevented by his death in 211, his son *Antoninus* at once concluding a peace with the rebellious tribes. Except for the brief usurpation of power by *Carausius* and his follower *Allectus*, who seems to have been supported by the *Caledonii*, almost nothing is heard of Scotland till 360, when the northern tribes began once more to make formidable attacks on the territory within the walls, the *Picts*—as they are now called—of the north being joined by *Scots* from *Ireland* and assisted by the *Atecoti*, whose territory lay within the Roman province, and by the *Saxons* who had since the latter part of the third century made frequent descents on the east coast. They were driven back by *Theodosius* in 369, but on the withdrawal of the Roman troops in 387 the *Scots* and *Picts* renewed their attacks; and though they were beaten back by a legion sent by *Honorius* to guard the northern wall, this was no sooner withdrawn in 402 than their assaults were renewed. They were again driven back by fresh Roman troops in 406, but the respite of the Romanised Britons was brief, for the legions were finally withdrawn in the following year, and in 410 the Roman occupation of Britain came for ever to an end, and the native tribes were left to fashion the destiny of their land in their own way.

The ensuing period of Scottish history is quite a blank, but the various tribes, or rather confederations of tribes, seem to have engaged in a hard struggle for mastery, and when we again find authentic record, somewhere about the beginning of the 7th century, Scotland was divided into four kingdoms held by four different nations, viz., the *Picts*, *Scots*, *Britons*, and *Angles*. The first held by far the greater portion of the country, their realm extending from the extreme north down to a line drawn through the island of *Mull*, up *Loch Linnhe*, eastward from the head of *Loch Leven* to *Drumalban*, and thence along this ridge to the line of the *Forth*, the river and firth of which formed its extreme southern limit. They held also the *Orkneys* and the greater portion of the *Hebrides*, and in what may be called the debatable tract to the south of the *Firth of Forth* they had settlements about *Edinburgh* in what was known as *Manaw*—where they have left traces of their possessions in the name of the *Pentland Hills*—and again farther to the south-west in the modern counties of *Wigtown* and *Kirkcudbright*, where dwelt the *Nidurians* *Picts* or the *Picts of Gallo-way*, the descendants of the old Goidelic *Selgovæ* and *Novantæ*. The main body of the nation to the north of the line of the *Firth of Forth* was divided into the *Northern Picts* to the north of the *Mounth*, and the *Southern Picts* between that and the *Firth of Forth*. The former must have contained, as already noticed, a very considerable admixture of the pre-Celtic inhabitants, while the latter were probably almost purely Goidelic in race, with in the south-west the addition of a district where the inhabitants were of *Brythonic* descent, and figure prominently in *Pictish* history as the *Men of Fortrenn*. How much the different races had, however, become blended into one great nation is shown by the fact that in the end of the 6th century we find the central seat of power and the residence of the king, *Brude mac Mailcon*, in the neighbourhood of *Inverness*, while his successor, *Gartnait*, transferred it to *Abernethy on the Tay*, probably from some more immediate personal connection with the southern portion of the race, for nothing is known of any revolution.

HISTORY.

They were in Brude's time converted to Christianity by St Columba about 563, and were then a united and powerful people. The nation seems to have consisted of a federation of small tribal bodies united into powerful district tribes ruled by Mormaers, these again owing allegiance to an Ard-ri, or High King. The succession to this office ran in certain families, but in right of the mother, not of the father, and the transmission of rule was latterly tanistic.

The kingdom of the Scots was almost co-extensive with the modern county of Argyll, and was bounded on the north by the line of heights to the north of Loch Leven and the line of the Black Water Lochs; on the east by Drumalban, whence the line struck across the middle of Loch Lomond, across the narrow neck between that and Loch Long, and thence down Loch Long and the Firth of Clyde. Their territory included also a portion of Mull, the whole of Islay and Jura, and all the islands in the Clyde. These Scots were sprung from the Irish branch of the Goidels. How the first colony, which was led across from the district known as Dalriada in the north of Ireland, in the end of the 5th century, by Fergus mac Erc and his two brothers, Loarn and Angus, first obtained footing in the district is not known, but having got it they rapidly spread their power over the whole district, which was portioned out among the descendants and adherents of the three brothers, who became known as the Cinel Gabran—that being the name of one of the grandsons of Fergus—the Cinel Loarn, and the Cinel Angus. The first held that portion of the Dalriadic kingdom which lies to the south-east of the line of Crinan Bay and Loch Awe; the second the modern district of Lorne, extending from Loch Leven to Craignish Point; and the third Islay and Jura. These subdivisions were in turn split up into smaller tribes. Their power was greatly extended and confirmed by Aidan, the great-grandson of Fergus. The seat of government was at Dunadd, near the mouth of the river Add at Crinan Bay. The kingdom of the Britons extended along the west coast from the high ground north of the Endrick southward to the Solway Firth, and thence into England, and seems to have stretched eastward as far as Selkirkshire, where the Catrail may mark the boundary. This people was Brythonic; the seat of government was at Alclwyd, the modern Dumbarton; and probably the succession, based on Roman principle—the Strathclyde Britons being highly Romanised—was in the male line. The portion of this tract inhabited by the Picts of Galloway has been already mentioned. To the east of the Strathclyde Britons, extending from the Firth of Forth southward to the Border, and thence into England, was the kingdom of the Angles of Bernicia, while the district from Edinburgh westward along the Firth of Forth and river Forth was a sort of debatable land between the Britons, Angles, and Picts. The Pictish Manaw has been already noticed; the Britons had a titful authority over the strip between the boundaries of the kingdom and the river Forth, and the Angles disputed the possession of the strip of Manaw along the coast. Bands of Saxons seem to have begun to form settlements on the east coast as early as the 4th century, and after the Romans quitted the island their numbers and power so greatly increased that they were able to wrest from the Britons considerable tracts of territory. One of these tracts lay along the south shore of the Firth of Forth, the native leader in the struggle here against the aggressors being probably the original of the great King Arthur. However that may be, the large number of scattered settlements of Frisians and Angles which had been formed all along the coast between the Tees and the Forth, were in 547 united into the kingdom of Bernicia by Ida, son of Eobba, and the Teutonic element thus

introduced into Scotland has had a very important influence on the national development.

The contest among these four kingdoms for the leading position and final mastery was long and severe, but a full account of the struggle would involve too many and minute details to be here given at length. About the middle of the 7th century a great victory of Oswy, King of the Angles, enabled him to bring both the Strathclyde Britons and the Dalriadic Scots under his power, while the death of Talorcan, King of the Picts, gave him also a pretext for trying to seize the Pictish throne, inasmuch as he claimed to be the next male heir of the late king, who had succeeded to the Pictish crown in right of his mother, but whose father seems to have been Ainfrid or Eanfrid, Oswy's brother, and to have taken refuge among the Picts on the defeat and death of his father at the hands of Aeduin, King of Deira, in 617. His claim not being allowed, he attempted to enforce it by arms, and brought the southern Picts into subjection, and Anglie rule over these three nations lasted till Oswy's death, and during the first part of the reign of his successor Ecgrid. The northern Picts attempted to recover their lost territory in 672, but the attempt was unsuccessful, and led to the expulsion of Drost, their king, and the election in his room of Bredei mac Bile, whose mother was daughter of Talorcan. Aided by a rebellion of the Dalriadic Scots, who had long been in a state of complete disorganisation, this king and his army made such progress, that in 685 Ecgrid awoke to the necessity of making a strong effort to crush this threatening opponent, and accordingly led a large army into Pictavia, where he was defeated and slain at Duin Nechtain, which is supposed to be Dunnichen in Forfarshire, the immediate result being that the Picts, Scots, and the Scottish portion of the Britons regained complete liberty. Bredei did not live long to enjoy his power, and the history of the next of the prominent Pictish kings, Nectan, son of Derili, who succeeded in 710, and who established the capital of his kingdom at Scone, is important rather in connection with the ecclesiastical than with the civil history of the kingdom, though his expulsion of the Columban clergy had the effect of placing the Dalriads, who supported their claims, in direct enmity to him, and probably of causing dissensions among his own subjects; for after Nectan became a monk in 724, there seems to have been a feeling of opposition between his supporters and those of his successor, Drust—a feeling that by and by resulted in civil war. After a stubborn contest among the four claimants for power who made their appearance, victory finally lay with Angus or Hungus mac Fergus, who firmly established his power about 730, and in 740 extended his dominion by conquering the Dalriadic Scots, whose kingdom thus became practically a Pictish province. In company with Eadbert, King of Northumbria, he also acquired power over the Strathclyde Britons, and the third king in succession after him, Alpin (775–80), seems also to have ruled over some part of the Saxon district south of the Forth, for in the *Annals of Ulster* he is termed King of the Saxons. Almost immediately after this, the hitherto accepted rule of Pictish succession, which never admitted the son of any former king as eligible for the crown, was broken through in favour of Talorgan, son of Angus, a proceeding which raised disputes between the southern Picts, who accepted his rule, and the northern Picts, who seem to have rejected it, and who, after having a separate king for some time, seem to have at length broken up into large tribes, owning allegiance only to their local rulers, and practically independent of the central authority in the south. This and other quarrels paved the way for a temporarily successful attempt on the crown by Alpin the Scot, sprung

from the Cinel Gabran, and probably ruler of a small body of Scots established in Galloway. Paternally descended from Fergus, and of Pictish descent by the mother's side, his claim was supported by all the Scots and by many of the discontented Picts, but the brief promise of power was quickly broken by his death in battle in 832. Kenneth, the son of Alpin, succeeded to his father's claims and ambition, and as the Pictish power was greatly weakened by frequent incursions of the Danes, and in particular by a pitched battle with these in 839, in which the Picts were defeated with heavy slaughter and a number of their leaders slain, this prince was in 842 able to make himself master of Dalriada, where he would doubtless be gladly welcomed by the Scots inhabitants. Two years later, in 844, he 'encountered the Picts seven times in one day,' according to the *Chronicle of Huntingdon*, 'and having destroyed many, confirmed the kingdom to himself,' and thus laid the foundation of modern Scotland, the Scots and Pictish claims for rule being, through his descent, united in his own person. The succession became firmly established in Kenneth's male line, and the sovereigns who had latterly been known as Kings of Scone were now called Kings of Alban.

The loss of Orkney and Shetland, which were about this time taken possession of by the Norwegians, is noticed in the article on Orkney, and the seizure of the islands off the west coast in that on the Hebrides, so that it is unnecessary here further to deal with the subject. From the Orkneys the Scandinavians spread to the mainland, where they possessed themselves of Caithness and most of Sutherland, so that in the beginning of the 10th century Scotland was divided into the kingdom of Alban proper, which extended along the east coast, from the Moray Firth to the Firth of Forth, with its western boundary marked by the Spey and Drumalban; the modern counties of Sutherland and Caithness, and the islands, all in possession of the Norwegians; Moravia or Moray, north and north-west of the Spey; Argathelia, lying to the west of the great line of watershed from Sutherland to Kintyre; and the portions to the south of the Clyde and Forth which were held as before. Malcolm, who was King of Alban from 942 to 954, tried, but unsuccessfully, to extend his kingdom beyond the Spey into Moray, but in 945 the limits of his power were substantially increased by Eadmund, King of Wessex, who, after overcoming the Strathclyde Britons, handed the rule of the district over to the Alban king, 'on the condition that he should be his co-operator on sea and on land.' In one of his numerous efforts to extend or establish his power in the north, Malcolm was slain, but where is not exactly known, some accounts placing the scene of his death in Kincardineshire, others in Moray. In the reign of his successors the kingdom received a further addition to its growing importance by its establishment in the debatable tract to the south of the Firth of Forth, this being brought about through the surrender of Edinburgh and the district to the west by the Angles, whose hold there seems to have been always precarious. This extension of territory to the south led to various attempts to seize the northern part of Bernicia, but none of them were successful till the time of Malcolm II. (1005-34), who in 1018 defeated the Northumbrian army at Carham near Coldstream, and was in consequence enabled to add to his dominions all the district from the Tweed to the Firth of Forth, so that, by the beginning of the 11th century, we find the kingdom—now that of Scotia—extending all along the east coast from the Spey to its modern boundary at the Tweed and Cheviots, while Strathclyde—now Cumbria—maintained a semi-independence, Moravia was practically quite independent, and Sutherland and Caithness, with

the islands and all the district to the west of the watershed, were under the sway of the Norwegians.

This Malcolm was the last male descendant of Kenneth mac Alpin, and on his death there was necessarily a fresh struggle for the succession, and this, though it was full of instant trouble, was probably on the whole beneficial for the future welfare of the country. 'Had any male descendant existed,' says Dr Skene, 'there would have been great risk of the territories now composing the kingdom becoming again disunited. As Malcolm had no son, but at least two daughters, who had male issue, Cumbria and Lothian would naturally have passed to the nearest heir in the female line; while a male collateral who could trace his descent from the founder of the family would, by the law of tanistic succession, have had a preferable claim to the regions north of the Firths of Forth and Clyde, forming the kingdom of Alban proper, and would probably have received the support of the Scottish part of the population at least; but the existence of any such male descendant cannot be traced, and the last male scion of the race appears to have been slain by King Malcolm in the year which preceded his own death, probably to make way for the quiet accession of Duncan, his grandson through his daughter, to the whole of the territories which he had united under his sway. He attained his object, for Duncan appears at first to have succeeded him in the whole of his dominions without objection. He appears, however, to have ere long provoked aggression both in the south and in the north.' The struggle in the north, which ended in Duncan's death, the accession of Macbeth to the supreme government of part of the country, and the extension of the Norwegian power to the south of the Moray Firth, and along part of the east coast, is noticed in the article on the Province of Moray, to which reference may be made.

Duncan left a son named Malcolm, who must have been a mere child at the time of his father's death, and who found refuge with his uncle Siward, Earl of Northumbria, who in 1054 advanced with a large army for the purpose of attacking Scotia and placing his nephew on the throne. A great battle was fought, probably near Scone, and though Macbeth was supported by his subjects, and assisted by his old ally Thorfinn and his Norwegians, Siward seems to have been victorious; but his success was so dearly bought that he was only able to establish Malcolm in possession of the country to the south of the Firths of Forth and Clyde, where we find him reigning over Cumbria and the Lothians for three years, at the end of which time the position of affairs had so greatly changed that he was able to make an independent effort to extend his power over his paternal dominions to the north, and this time so successfully that he totally routed Macbeth, who was driven across the Mounth and killed at Lumphanan. How this change came about in such a short time cannot now be ascertained, but it probably depended directly on the death of Thorfinn in 1057, for immediately thereafter the Celtic tribes along the east coast threw off the Norwegian government, and many of them would then be able to afford to Malcolm the substantial support which they were unable to give in the earlier contest. That they were ready to do so is highly probable, as this district was the seat of power of Malcolm mac Kenneth, from whom Malcolm son of Duncan was descended. The early part of his reign the king, who obtained from his subjects the distinctive name of Ceanmhor, spent in consolidating his power, and probably also in introducing the first of those changes which were by and by to revolutionise the condition of the land. Hitherto the dominant race, both Picts and Scots, had been Celtic; but with Malcolm's accession the purely Celtic portion of Scot-

tish history may be said to come to an end, for just as Kenneth mac Alpin, representing the royal lines of both Picts and Scots, was able to unite these two nations firmly under his government, so now Malcolm, representing the royal lines of both Scots and Saxons, was fated to unite all the races into one compact whole, in which, however, at this earlier time from the king's youthful Northumbrian training, and thereafter through the influence of his wife, the Teutonic portion of the population was destined to take the leading place. His queen, Margaret, to whom Malcolm was married in 1068, was the sister of Edgar Atheling, and had, along with many other Saxons of royal and noble birth, fled to Scotland for refuge after England had fallen under Norman rule in 1066. Fair and pure minded, she seems to have exercised—and that for good—a very strong influence over the king; and, as a natural consequence, he was eager to carry out all her wishes, so that her countrymen, who crowded to Scotland in large numbers after the marriage, were received with high favour, and under their guidance the Teutonising of Scottish institutions went on apace. Malcolm's Saxon sympathies led him into war with England, in which he made vigorous efforts to extend his south-eastern frontier to the Tyne, but in vain; and during one of these expeditions in 1093 he was surprised and slain at Alnwick Castle, in Northumberland, while the queen died almost immediately afterwards. He left a kingdom having much the same extent as modern Scotland, except that Caithness and the Orkney Islands were still Norwegian, and the power of the Scottish king in Ross, Argathelia, and the Western Islands was rather nominal than real.

These sudden deaths caused another dynastic struggle, and thus greatly retarded the progress of the country, for the northern races, who had probably looked with no great favour on the Saxonising process that had been going on, seem to have adhered at first to Malcolm's brother, Donald Ban, who, according to tanistic law, was his proper successor; and the *Saxon Chronicle* says that they also 'drove out all the English who were before with King Malcolm.' Donald's claims were, however, disputed by Duncan, son of Malcolm by his first wife, the Norwegian princess Ingibjorg, who had long been a hostage at the English court, but who was now allowed to come north to dispute his uncle's succession—a venture in which, aided as he was by the Normans, and supported by Saxon and Norse elements in the kingdom, as well as by part of the Celtic population, he was successful. Brief as was his reign—for within six months he was treacherously slain at Mordunnes in Kincardine—it was yet long enough to show that the feeling of independence and distinct nationality, which was afterwards to become so marked in the end of the 13th and the beginning of the 14th centuries, already existed strongly throughout the nation, for the *Saxon Chronicle* says that some of the Scots 'gathered together and slew almost all his followers, and he himself with few escaped. Afterwards they were reconciled, on the condition that he should never again harbour in the land either English or French'—a statement which seems to imply that they considered him as too much under Norman influence, and interpreted by Dr Skene as a probable indication that before Duncan had left London he had been compelled to acknowledge himself as vassal to the English king for the whole of Scotland—a position which the Celtic portion of his subjects, at any rate, refused to recognise. On his death rule over the north at once reverted to Donald Ban, who now tried to strengthen his power and disarm the opposition of the Lothians and Cumbria, by associating with him Eadmund, the eldest surviving son of Malcolm by Queen Margaret, who seems to have

had Lothian assigned to his rule. The dominion of both came to an end in 1097, when Edgar Atheling drove them out and seated the next of Malcolm's sons, Eadgar (1097-1107), on the throne. The power of the prince did not extend firmly over the whole kingdom, and almost at the commencement of his reign he had to allow the Norwegian king, Magnus Barefoot, to take possession of the Western Islands and Kintyre. Eadgar died in 1107, and the kingdom was for a time once more divided, his next brother, Alexander (1107-24) becoming king over the portion north of the Firths of Forth and Clyde, as well as of the debatable land up to and including Edinburgh; while the youngest brother, David, became ruler of the rest of Lothian and of Cumbria, with the title of Prince of Cumbria. Alexander, who was surnamed the Pierce, seems to have enforced his power vigorously over his rebellious northern subjects; but otherwise, except for a quarrel with the Pope and the Archbishops of York and Canterbury as to the consecration of a Bishop of St Andrews, in which he maintained the independence of his kingdom against all foreign interference, his reign was uneventful.

On his death the whole realm was again united by the accession of David (1124-53), Prince of Cumbria, and, in right of his wife, also Earl of Northampton and Lord of Huntingdon. He had spent much of his life in England at the Court of Henry I., where, under Norman influence, he had become, as it is put by a contemporary English annalist, thoroughly 'freed from the rust of Scottish barbarity,' and imbued with feudal ideas. He was undoubtedly the greatest of our early kings, and, except during the brief period of his wars with England in support of the claim of Henry's daughter, Maud, to the throne, the whole of the rest of his reign was devoted to the carrying out of wise and well-judged measures for the further extension of the civilisation which, introduced by Malcolm Ceanmor and Queen Margaret, had had its progress so abruptly stopped by their death. To attain this end one of the chief instruments used by David as well as his predecessors was the Church, which was encouraged, by those liberal donations of land which drew from James VI. the melancholy complaint that this monarch was 'ane sore sanct for the crown,' to spread itself over the whole country, and exercise the great civilising influence which it undoubtedly possessed at this early time. The little royal burghs which he established everywhere with such free hand must have also been centres from which 'sweetness and light' passed into the surrounding districts, while in the *Leges Burgorum* drawn up by the king and his advisers for the government of these we find the first attempt to give Scotland written law. He seems to have brought with him from England a number of Norman friends, and with the aid of these, to many of whom he made large grants of land, he steadily set himself to supersede old Celtic conditions by feudal institutions based on the Norman system. Before these the Saxon influence introduced by Malcolm III. gradually disappeared, and the feudal Scotland thus formed, with Norman ideas as the basis of rule, though much shaken by the results of the Reformation, practically existed till the end of the reign of Charles I. Grievances connected with this introduction of feudalism led in 1130 to a rebellion in the north, headed by Angus, Earl of Moray, and Malcolm, an illegitimate son of Alexander I.; but the rebels were defeated by an army under David's cousin, Edward, son of Siward—the king himself being in England—who, 'entering Moravia, now deprived of its lord and protector, obtained, by God's help, possession of the whole of that large territory. Thus David's dominions were augmented and his power was greater than that

of any of his predecessors.' How firm, indeed, was his rule all over Scotland is well shown by the strange combination of races which formed the army with which he invaded England in 1130 in support of the claims of his niece Maud to the English throne, and with which he fought the battle of the Standard. The van was formed by the Picts of Galloway (who appear with their old name for the last time), the second line by the men of Strathclyde and Teviotdale (Britons), the third by the men of the Lothians (Angles), the Islesmen and the men of Lennox (both probably mixed aborigines, Celts and Norse), and the fourth by the Scots and the men of Moray (both Celtic and mostly Pictish). The authority which he had acquired at this early date in his reign he maintained with a firm hand to the end, for we hear of no further outbreaks against his power, and he was thus enabled to give his attention to the full development of the kingdom, his success in which may be best described in the words of the encomium of George Buchanan—no great lover of kings—who says 'that if the most learned men should strive with all their skill to express the idea of a good king, their minds would fail to conceive such an one as David proved himself to be during the whole course of his life.'

His eldest son Henry having predeceased him, David was succeeded by his grandson Malcolm IV., surnamed the Maiden (1153-65), then a boy of only twelve years of age, who was immediately crowned at Scone. The accession of a minor was at once the signal for an outbreak by Somerled, the petty king of Argathelia, and hardly had peace been made with him when fresh troubles, caused apparently by the idea that Malcolm was too much under control of the English king—and so prophetic of the spirit that was to animate the whole country during the war of independence—took place in central Scotland. Terms were, however, made, and in 1160 the king, young as he was, showed his capacity for rule by repressing further outbreaks in Galloway and Moray, and in 1164 by the defeat of Somerled, who had invaded the district to the south of the Clyde, but who was met and slain at Renfrew, and his army routed by the royal forces. Malcolm died at the early age of twenty-four, and was succeeded by his brother William, surnamed the Lyon (1165-1214), who, during an invasion of England consequent on a quarrel about the earldom of Northumberland, was taken prisoner by the English in 1173—an event at once followed by a revolt of the Celtic populations in Galloway and north of the Forth against the English and Norman barons who had been placed in their midst as their feudal superiors, and whom they now 'wickedly and ruthlessly slew.' The release of William in the following year put an end to the strife, but he had purchased his liberty at the expense of his independence, for he had agreed to do allegiance to the English king for the whole kingdom of Scotland, an undertaking to which his subjects never consented, and as to which they were indeed never consulted. Considering the temper they had twice already shown that consent would never have been given, and the agreement, such as it was, though it was thus quite invalid, was nevertheless fraught with future trouble for the country. In 1179 the king, whose northern subjects, ever since his surrender of Scottish independence, had been in a state of veiled or open rebellion and civil war, passed northwards with a large army, and after settling the country to the south of the Moray Firth, subdued the whole of the great province of Ross, up as far as the Dornoch Firth, this district having hitherto maintained a quasi-independence. He had hardly, however, again returned to the south, when the whole country north of the Spey united in support of a Celt

named Donald Ban, who claimed the sovereignty as being directly descended from Duncan, son of Malcolm III.; and a few years afterwards outbreaks took place also in Galloway and in Strathorne. The latter were at once suppressed, but Donald Ban MacWilliam was not put down till 1187, when he was defeated and slain; and when, in 1189, the independence of Scotland was admitted by Richard I., the hostility of the northern Celts was appeased, and in 1196 William was able to add Caithness to his territory, and establish the royal authority in what had previously been an appanage of the Norwegian earldom of Orkney. An easily suppressed insurrection in Ross in 1211 was the only other incident of this long reign.

William was succeeded by his son Alexander II. (1214-49), a young man of seventeen. The early part of the reign of the new king was again disturbed by insurrections in the north, but these were suppressed by Ferquhard Macintagart, afterwards Earl of Ross, the lay possessor of the lands of the old monastery of Saint Maelrubha at Applecross, and in reality a great Highland chief with a powerful following. As part of Macintagart's possessions consisted of the northern part of Argathelia, and as the later rebel leaders had derived a good deal of assistance from the southern part of the province, the king raised a large army and subdued the disloyal portion in 1222. Galloway, which was again in a state of rebellion, was subdued in 1235, and thereafter Alexander determined to wrest the Hebrides from Norway. An account of his operations will be found in the article on these islands, in one of which, Kerrera, the monarch died while the war was proceeding. He was succeeded by his son Alexander III. (1249-85), then only eight years old, and during the first part of his reign the war was stopped, but no sooner had he attained his majority than it was again renewed and the islands finally secured for Scotland by the defeat of Hakon at the battle of Largs.* The rest of Alexander's reign was peaceful, and under his wise and able rule the country rapidly increased in prosperity—prosperity that was at once checked by the unfortunate death of the king, who was thrown from his horse and killed as he was riding from Dunfermline to Kinghorn to visit the queen, and that did not resume its course till the time of James I. How great a change passed over Scotland between the accession of Malcolm Ceanmmor and the death of Alexander III. has been thus briefly put by Dr Ross in his *Early Scottish History and Literature*:—'Before Malcolm Ceanmmor's time Scotland was inhabited by a rural population scattered over the face of the country in mean hamlets and bothies and supporting itself mainly by flocks and herds and by a rude and insignificant agriculture. Architecture was unknown; commerce did not exist; religion and learning were dead. Before the death of Alexander III. had left Scotland a prey to foreign ambition and rapacity, successive generations of landed proprietors, small and great, had been bound to extend the area of their cultivated land; even those who had no land were, according to Fordun, under an obligation to dig daily seven feet square of earth. Towns had sprung up and had originated both a home and foreign trade. Berwick, then a Scottish possession, had become the greatest port in the Isle of Britain—"The Alexandria of the North." The Church had arisen from its Culdee tomb with more than Columban vigour; by its noble structures, its educational efforts, its elaborate ritual, its parochial organisation, the energy of its prelates and abbots, as well as the unbroken favour of the Scottish kings, it had recovered

* Details of the battles and many of the other leading historical events will be found in the separate articles dealing with the places where they occurred.

its spiritual authority, and was once more a power over the consciences of men. A great judiciary system had long been in operation, which required the services of the feudal baronage. In a word the kingdom was completely changed.'

Alexander's two sons and his daughter had all died before him, but the last, who was married to Eric, King of Norway, had left an only child, a little daughter—the Maid of Norway—who was now heir to the throne. Her claim had been admitted at a meeting of the whole baronage at Scone in 1284, after the death of Alexander's second son, and now an embassy was despatched to bring her home from Norway, and preparation was made for the government of the country during her minority. The astute and ambitious Edward I., who then occupied the English throne, and who was anxious to see the two countries united, deemed the chance a favourable one for his purpose, and proposed that a marriage should take place between his son Edward and the young Scottish Queen; and at an assembly of the nobles held at Birgham the proposal was agreed to, full terms being made for the independence of Scotland and its government. Hardly, however, had the so-called Treaty of Birgham been signed, when Edward, by various demands which were inconsistent with its terms, excited suspicions as to his real design, which was to get the whole government at once into his own hands. The young Queen, who was the last descendant of the royal family in a direct line from William the Lyon, died at Orkney on her way to Scotland, and, as her death was unexpected, no provision had been made for the succession to the throne. Ten competitors for the crown, descended on the female side from older branches of the family, at once made their appearance. Of these the chief were John Baliol, who was the grandson of the eldest daughter of King David, and Robert Bruce, the son of David's second daughter, and though the claim of the former was undoubtedly the better as regards descent, each was supported by a body of numerous and powerful adherents. All the claimants were of Norman families, and as such were regarded by the mass of the people as foreigners, and therefore looked on with little favour. By dexterous diplomacy Edward prevailed on them to refer the decision of their claims to himself, insisting, however, that before this was done, all should acknowledge his supremacy; and this, after some delay, they all consented to do, though the community entered a disregarded protest against any such claim being recognised. In 1292 he decided in favour of Baliol, who at once did 'homage as justly due to Edward as lord-superior of Scotland;' but no sooner was the new vassal settled on the throne than the liege-lord he had acknowledged set himself, by a series of studied insults, to stir him up to rebellion, and, as even the worm will turn at last, he was finally successful just as he wished. In 1296 Edward assembled a large army, and marched northward as far as Elgin, whence, finding that resistance had ceased, he returned to Berwick, taking Baliol with him, and leaving all the principal castles strongly garrisoned with English troops and all offices of power in the hands of Englishmen. Hardly, however, had he thus seen his conquest completed, as he fancied, when Sir William Wallace, with the aid of Sir William Douglas, raised a successful rebellion in the south-west and centre of Scotland, and after defeating the English governor, the Earl of Surrey, at Stirling, drove Edward's garrisons out of the country. The English King, who was in Flanders, hastened home, and, marching north at the head of a large army, with which he defeated Wallace at Falkirk, repossessed himself of the whole country between 1298 and 1303. Wallace himself, specially excepted from amnesty, was captured by treachery near Glasgow, and taken to

London, where, after a mock trial, in which he was not allowed to defend himself against the false charges brought against him, he was hanged and quartered in 1305.

Even yet Edward's usurped power did not long remain secure, for in 1306 a new outbreak took place, headed by Robert Bruce, son of the Lord of Annandale who disputed with Baliol for the crown. At first the rising was not very successful, for the Scottish army was surprised and defeated at Methven, and Bruce's castle at Kildrummy, whither he had sent his wife for safety, was captured. He himself had to take refuge in Rathlin Island, off the Irish coast, and afterwards in Arran, whence he was able to reach the Ayrshire coast, where some of his estates were, and surprise and capture his own castle of Turnberry. Aided by Sir James Douglas, he again took the field, and the death of Edward I. at Burgh-on-Sands, while on his way north in command of his army, and the inaction of his son, Edward II., gave the Scots a chance of which their leader was not slow to avail himself; and, after defeating Comyn and an English force in Buchan, he gradually recovered the whole land, till in 1313 the only castle still garrisoned by the English was that of Stirling, which surrendered in the following year, after the battle of Bannockburn. The independence of Scotland was formally recognised by England in the treaty of Northampton in 1328, but King Robert did not live to apply his strong will to the settlement of the kingdom, as he died at Cardross in 1329, and under his son David II. (1329-71), who was only five years old when he succeeded, the country fell into a state of complete anarchy, a number of disaffected nobles having joined a rebellion headed by Edward Baliol, the son of John, whose pretensions were also supported by England. The chief Scottish defeats were at Halidon Hill and Neville's Cross, at the latter of which battles David himself was taken prisoner, and was not released till eleven years afterwards, in 1357, when he obtained his liberty on payment of a large ransom. He was succeeded by Robert II. (1371-90), son of Bruce's daughter Marjory (see PAISLEY), and the first of the Stewart line of kings. The early part of his reign was pretty free from trouble with the English, but many raids took place on both sides, the chief being the one in 1388, which terminated in the famous battle of Otterburn or Chevy Chase, after which there was peace between the rival nations for eleven years. Robert II. was succeeded by his son Robert III. (1390-1406), who, with good intentions but a weak will, allowed the power to fall into the hands of his brother the Duke of Albany. Raids on both sides again commenced on the expiry of the eleven years' truce in 1399, but the only noteworthy feature of them was the disastrous defeat sustained by the Scots at Homildon Hill near Wooler, in Northumberland. The Duke of Albany was suspected of cherishing designs on the throne, and the suspicion being confirmed by the mysterious death of the king's eldest son, the Duke of Rothesay, in 1402 at Falkland Palace, where he had been confined by Albany's orders, Robert was in 1405 induced to send his only other son James, then a boy of fourteen, to France to be educated. Though England and Scotland were at peace at the time, the ship in which he set sail was captured by an English ship, and James was detained as a prisoner by the English king. This crowning misfortune seems to have broken Robert's heart, and he died in the following year. Though James I. (1406-37) thus nominally succeeded in 1406, he was not released till 1424, the government of Scotland being carried on first by Albany down to 1419, and then by his son Murdoch. The noteworthy event of the period was the battle of Harlaw. Though James had been detained

as a captive, he had been trained and educated as carefully as if he had been heir to the English throne instead of king of Scotland, and no sooner had he taken the government into his own hands than he set himself vigorously to the task of introducing law and order throughout the kingdom.

It is curious, as showing how far England in the early centuries had outstripped Scotland in civilisation, that both the early reforming and law-giving kings of the latter country were educated at the English court. James's reforms, however, caused disaffection in some quarters, and he was basely murdered at Perth in the beginning of 1437. From this time till that of James VI. Scottish history is almost a mere list of trouble and misgovernment, arising from quarrels and struggles for power among a set of turbulent nobles who had often no strong hand to keep them in order, inasmuch as the next six sovereigns all succeeded to the throne while they were minors. During the reign of James II., the Douglasses, who had so increased in power, and unfortunately also in misplaced pride, as to regard themselves as equal in authority to the king, had their influence broken by the murder of the sixth Earl at Edinburgh Castle in 1440; by the assassination of the eighth Earl by James himself at Stirling Castle in 1452; and by the defeat of the ninth Earl and his brothers, the Earl of Moray and the Earl of Ormond, at Arkinholm, where the town of Langholm now stands, in 1454. James II. was killed at Roxburgh in 1460. His son James III. (1460-88) seems to have been a man of culture, but weak of will, and fond of entrusting the government to favourites. The first of these were the Boyds of Kilmarnock, who fell into disgrace in 1468, and were succeeded by a body of men who seem to have been connected with the fine arts, and whom some of the nobles hanged at Lauder Bridge in 1482. In 1488 it was suspected that James had entered into communication with Henry VII. of England, with views favourable to a revival of the old claim of overlordship, and a confederation having been formed against him, the royal forces were defeated at Sauchie, and the king murdered as he fled from the field of battle. James was married in 1469 to the daughter of Christian I., King of Denmark, and received the Orkney and Shetland Islands in pledge for part of her dowry (see ORKNEY), so that it was in his reign that the kingdom finally reached its present extent. In the reign of his son and successor, James IV. (1488-1513), the most noteworthy events were the thorough subjection of the Lord of the Isles; the king's marriage with Margaret, daughter of Henry VII., which a century afterwards opened the way for the accession of the Stewart line to the throne of England; and the war at the end of his reign terminating in the fatal battle of Flodden, where, through bad generalship, James himself and 10,000 of his army, including a large number of men of note, were slain. James V. (1512-42), who succeeded, was, in the early part of his reign, entirely in the hands of the Earl of Angus, who conducted affairs pretty much as he pleased till 1528, when the king, then seventeen years of age, escaped from Falkland to Stirling, and Angus's power was broken. He promised to make a vigorous ruler, and established order along the Borders and in the Western Islands in 1530-32, but his unfortunate partiality for a favourite named Sinclair led to a disaster to his army at Solway Moss in 1542, and James, already ill with vexation at the refusal of his nobles to march with him into England, removed to Falkland, where he died in the end of the same year. It was during his reign that the Reformed doctrines first began to make headway, but the tracing of their spread and results fall to be dealt with in the section on Ecclesiastical History.

James was succeeded by his daughter, the beautiful but unfortunate Mary Queen of Scots (1542-87), who was at the time of her accession an infant of only a week old. Henry VIII., who was then King of England, wished a marriage to take place between the infant queen and his son Edward, and the Scottish Estates agreed to this proposal; but, quarrels having arisen between the two countries as to alleged piracy by English vessels and Border raids, the treaty was not confirmed. Henry tried to enforce compliance to his wishes by invasion, and in 1544 the Earl of Hertford wasted the whole of the south-east of the country, burned Edinburgh and Leith, and spread ruin far and wide. He invaded the same district again in 1547, when he defeated the Scottish army at Pinkie; and in the following year the young queen, who had been sent for safety to Inchmahome in Lake Menteith, was sent away to France, where in 1558 she was married to the Dauphin, who succeeded to the throne in 1559. As Francis seemed inclined to treat Scotland as a French province, fresh difficulties would clearly have arisen, but he died in 1560, and Mary returned to Scotland. On her arrival, she found the nobles divided into two parties, one of them, headed by the Earl of Huntly, adhering to the Roman Catholic Church; the other by her half-brother, James, Earl of Murray, adhering to the Reformed doctrines. At first she sided with the latter; but after her marriage with Darnley the alliance was broken. Her married life was unhappy, and having conceived a passion for the Earl of Bothwell, she seems to have become privy to a plot for her husband's assassination, which was perpetrated near Edinburgh in 1567, and was married to Bothwell in little more than three months after. These proceedings having alienated the greater number of her subjects, a confederation was formed against her; and after a vain effort to get an army to fight on her behalf at Carberry Hill, she surrendered, and was confined in Lochleven Castle, where shortly after she was compelled to abdicate the throne in favour of her infant son, James VI. (1567-1625), and to appoint the Earl of Murray regent. Early next year she escaped, and passing by Niddry Castle to Hamilton, placed herself at the head of an army, and advanced towards Dunbarton. Her forces were met and defeated by Murray's army at Langside (see GLASGOW), and she herself fled to England. Murray ruled well and wisely; but after his assassination at Linlithgow in 1570, there were, down to 1581, a succession of regents who were quite incapable of governing their turbulent brother nobles, and who allowed affairs to fall into great disorder. From 1581 to 1603 James may be considered as ruling himself, though in the early part of that time the power was really exercised by the Earls of Lennox and Arran. From their hands he was rescued by the lords engaged in the Raid of Ruthven. The only other event of the reign, prior to 1603, was the Gowrie Conspiracy.

On the death of Elizabeth in the year just mentioned, James, as the nearest heir through his descent from Margaret, daughter of Henry VII., and wife of James IV., succeeded to the English throne, and from this date Scotland ceases, except in one or two instances, to have a history separate from that of the United Kingdom. The struggle between Presbyterianism and Episcopacy, important as were its effects on civil as well as on religious liberty, falls properly to be dealt with in the section on Ecclesiastical History; but it may be noted that while the 'blue bonnets' whom Leslie, in consequence of this quarrel, led over the Border, and who had such an important effect on the issue of the great English civil war, were busy in the south, Montrose, by his rapid march from Athole on Perth and Aberdeen and all over the north, with his

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victories at Inverlochy, Auldearn, and Alford, and afterwards at Kilsyth, almost recovered Scotland for Charles ere his army was dispersed at Philiphaugh. The support afforded by the Scots to Charles II. in 1649-50 failed in its object, and the whole country fell under the power of Cromwell; and though the Restoration was nowhere hailed with greater joy than in Scotland, the misgovernment and religious persecution with which Charles and James VII. repaid past exertions on their behalf, made the greater part of the people eager to welcome the deliverance brought by William of Orange. The exiled house still, however, retained a firm hold over the hearts of many Scotsmen, especially in the Highlands, and the amount of discontent that prevailed so alarmed Queen Anne's advisers, in view of objections to the succession to the throne and the chances of a civil war, that they prevailed on the Scottish Estates to pass a bill providing for the Union of the two kingdoms, which accordingly took place in 1707. The result of the Act, as well as the means used to carry it through, were unsatisfactory, and caused discontent which, partly at all events, led, on the Queen's death and the accession of George I. in

1714, to an armed rising of Jacobites under the Earl of Mar. A considerable army gathered at Perth, but their advance was checked at Sheriffmuir, and the hopeless incompetence of the Chevalier, who took command in person, soon after completed the ruin of the rebellion, and Mar and James slipped secretly on board a French vessel at Montrose, and left their poor followers to their fate. In 1745 the Chevalier's son, Prince Charles Edward, with only seven adherents, crossed from France to make another but more determined effort of the same sort. Landing on the west coast of Inverness-shire, and setting up his standard at Glenfinnan, where he was joined by many of the Highland clans, he marched south by Perth to Edinburgh, defeated Cope at Prestonpans, and penetrated into England as far as Derby. On the retreat he defeated General Hawley at Falkirk, but was totally routed by the Duke of Cumberland at Culloden, and with this last Jacobite rising the separate history of Scotland comes entirely to an end, and the Scottish independence and steadfast effort so strongly exemplified by all the national history becomes thereafter an important factor in the development of Great Britain.

ECCLESIASTICAL HISTORY.

By the Rev. JOHN REITH, B.D.

CHRISTIANITY existed in Scotland during the time of the Roman occupation. In 397, towards the close of that period, St Ninian is said to have introduced it among the southern Picts at Whithorn, and thence to have spread it as far north as the Grampians. From 410, when the Romans left Britain, till about the middle of the sixth century, is a legendary period of Scottish Church history. This Fordun filled up with narratives borrowed from previous chroniclers, which were enlarged by Hector Boece, but which are not accepted by modern critics as historically accurate. Thus there seems to be no historical ground for supposing that St Palladius was ever in Scotland at all. St Servanus, who is said to have been found by Palladius on his arrival in Scotland (430), belongs to the latter half of the seventh century, and the Culdees are really never heard of till the beginning of the eighth century.

Towards the close of the fifth century, a colony of Scots from the north-east of Ulster settled in the west of Scotland in a district which at least after that was called Dalriada. Although for a time they prospered and spread, they kept their footing with difficulty till the arrival (563) of Columba, who, by his influence with Brude, King of the Picts, secured them from molestation. (See IONA and INVERNESS.) They then extended their operations eastward, and the whole of Scotland north of the Forth was christianised. South of the Forth the great missionary was St Cuthbert, whose abbey at Lindisfarne was to the north of England and Lothian what Columba's monastery in Iona was to the north of Scotland—the centre of ecclesiastical government and religious enterprise. At this period there was no organisation that could properly be called a church. The country was christianised by a system of monastic settlements, and although the missionaries were ordained, they were under the jurisdiction of the abbots of the monasteries, who were often laymen. See our articles WHITHORN, FORDOUN, IONA, INVERNESS, and MELROSE.

During the next period of Scottish Church history—the seventh and eighth centuries—the important ques-

tion is the controversy between the native Church and the Roman Church regarding the observance of Easter, the shape of the tonsure, etc. When the purely Christian festival of Easter was substituted in the early Church for the Jewish Passover, great difficulty was experienced in adjusting the day of the week, or solar time, to the day of the month, or lunar time. The system adopted in the Western Church was to celebrate Easter on the Sunday between the 14th and the 20th day of the moon first after the vernal equinox, calculated on a cycle of eighty-four years. But a change was made in 457, and in 525 the cycle of nineteen years was finally adopted—Easter to fall on the Sunday between the 15th and 21st day of the moon. Now this change took place at the time when Ireland was completely isolated, so that the Christians there held by the former system, and regarded the latter as an unwarrantable innovation. In 710 Nectan, King of the southern Picts, issued a decree that the Catholic mode should be observed throughout his dominions; and as the Columban monks refused to comply with this decree, the whole of them were expelled from his kingdom (717).

At the time when the Church in Scotland was coming into collision with the Church of Rome in this manner, two influences were at work modifying its constitution internally. One of these was the introduction from the Church of Rome of a hierarchy of secular clergy, with bishops exercising jurisdiction over the monasteries. The other was the rise of the so-called Culdees or Anchorites (the name representing the Lat. *Deicolæ*, which was applied to Anchorites, as specially God-worshippers), who are first heard of in Scotland after the expulsion of the Columban monks. When in the ninth century they were brought under canonical rule, along with the secular clergy, the name of Culdees came to be almost synonymous with secular canons. An attempt was made by Kenneth mac Alpin to restore the Columban Church in his dominions; and for this purpose he founded an abbey at Dunkeld, and made its abbot the first Bishop of Fortrenn (*i.e.*, the kingdom of the southern Picts), whose seat was transferred to ABERNETHY in

865. The seat of the bishop of the Scottish Church (a title which first occurs in the time of Girig, 878-89), or Bishop of Alban, was transferred to St Andrews about 908. After the battle of Carham (1018), when Lothian was ceded to Malcolm II., the churches in that district fell under the jurisdiction of the Bishop of St Andrews as sole Bishop of Scotland.

An important influence was exercised on the Scottish Church by Margaret, the English princess, who wedded Malcolm Ceanmor in 1068. Her policy, which was continued by Malcolm's successors, was (1) to substitute a diocesan episcopacy for the old monastic jurisdiction; (2) to introduce religious orders; and (3) to absorb the Culdees into the Roman system by converting them from secular into religious canons. King Alexander (1107-24) created two new bishoprics—Moray and Dunkeld; and his brother David, while yet Earl of Cumbria, reconstituted the bishopric of Glasgow (about 1115). When he became king (David I.), he created three new bishoprics—Aberdeen, Ross, and Caithness; and towards the close of his reign other two—Dunblane and Brechin. Alexander and David also founded a large number of monasteries for the regular canons of St Augustine and for Benedictine monks. And even more direct measures were taken for the extermination of the Culdees. Their revenues and rights were bestowed on the regular canons; and such was the pressure brought to bear upon them, that this last remnant of the old Celtic Church was absorbed into the order of regular canons in the course of the thirteenth century. See DUNFERMLINE, COLDINGHAM, MELROSE, JEDBURGH, KELSO, DRYBURGH, NEWBATTLE, etc.

The Church of Scotland was now completely assimilated to the Catholic Church in the rest of Europe. And previous to the Reformation the corruptions of the Church had grown to a greater height in Scotland than in any other nation within the pale of the Western Church. In the second quarter of the sixteenth century, several persons were put to death for heresy, that is, preaching against the errors of the Church—Patrick Hamilton (1528), George Wishart (1546), Adam Wallace (1550), and Walter Mill (1558). But the death of these men, with the exception of the last, did not produce any wide-spread excitement. The truth is, that the causes of the Reformation were of a more practical nature than anything connected with a corruption of doctrine or abuses in matters purely religious. First, there was the collision between the higher ecclesiastics and the nobility. For a time the latter had seen their property and power taken from them to enrich the clergy; and when a set of teachers arose who taught that the clergy had no right to the position and wealth they had assumed, the nobles were very willing to be convinced. By the poorer classes, the tithes and other dues exacted by the Church were felt to be a burden. In 1557 the first Covenant was signed—a document by which the leaders of the Protestant party—the Lords of the Congregation, as they were now called—bound themselves to co-operate with each other in maintaining and establishing the Word of God, and in enmity to the antichrists of the time. The *casus belli* was the burning of Walter Mill. The Lords of the Congregation laid a remonstrance before the Regent, who received it in such a conciliatory manner as to allay the excitement for a time. An ecclesiastical council, too, met in 1559, to consider certain suggestions for reform made by a body of gentlemen well affected to the Established Church. But such attempts at internal reform came too slowly or too late. The Queen Regent at this time assumed an attitude of distinct hostility to the Reformers, and her persecutions helped to produce an outbreak of popular zeal in their favour at Perth. The symbols of idolatry were attacked by the

mobs, and many of the religious houses destroyed. The Reformers now issued manifestoes expressing defiance of the Queen Regent, who attempted to crush the opposition to her authority by means of French troops. Distrusting her strength, however, she made promises, on the faith of which the Congregation dispersed from Perth, where they had organised a defence. These promises were almost immediately broken, and the consequence was a fresh accession of strength to the Reformers, who now took possession of St Andrews. They were not only able to hold their own there against the royal army, but they marched on Edinburgh, and took it (June 29). They were unable to retain this position, but a treaty with England was made (January 1560); English assistance was sent to Scotland; and the French army withdrawn. The Estates being convened in August, a Confession of Faith embodying the principles of the Genevan Church was approved of; all previous Acts on religious matters repealed; the authority of the Pope abjured; the celebration of the Mass declared illegal; and Calvinistic Protestantism established as the national religion. The first General Assembly of the Protestant Church of Scotland was held on the 20th December 1560.

But the victory of the Reformers was yet far from being complete. Under the influence of Mary, a Catholic reaction set in, and a dispute arose among the Protestants themselves. The clergy had adopted, besides the Confession of Faith, a Book of Discipline, which the laymen were unwilling to subscribe, because it proposed that, while the tithes went to the support of the ministers and the poor, the revenues of bishops, abbey, and cathedrals should go to the endowment of colleges and schools. This was not what Knox's coadjutors had worked for. The deposition of Mary was favourable to the Reformation. The Regent took a solemn oath to maintain the Reformed Faith and to abolish Popery. The General Assembly prepared a scheme providing effectually for the security of the Protestant cause, which was confirmed by Parliament in 1567; and from this time Protestantism was firmly established, and the Reformation complete.

But after the death of Knox (1572) a new conflict began—between Presbyterianism and Episcopacy. The Regent Morton favoured the latter, because he hoped, by means of the bishops, to exercise a power over the Church which would contribute to the stability of the government; and the nobility favoured it, because they hoped, by means of the bishops, to keep part of the plunder of the Church. Accordingly, by the Convention of Leith (1572) it was enacted that the titles of archbishop and bishop should be retained till the king's majority. But as the bishops were to be chosen by the ministers, and subject to the General Assembly in matters spiritual, the anomaly was presented for a time of Episcopacy and Presbyterianism co-existing in the Church of Scotland. The first objections to the lawfulness of the Episcopal form of government were made at the Assembly which met at Edinburgh in 1575. The ring-leader in the opposition was Andrew Melville, whose naturally vigorous mind had been imbued with the opinions of Beza and other Reformers with whom he had come in contact on the Continent. Led by him, the ruling party in the Assembly passed successive enactments curtailing the powers of the bishops; and the Second Book of Discipline, which embodied his opinions, was finally adopted by the Assembly in 1581, an act abolishing Episcopacy having been passed in 1580. The National Covenant of Scotland, also enacted at this time (1580), was intended as a test of orthodoxy in regard to prelacy. The outrage on the king, called the Raid of Ruthven (1582), produced a great reaction, so much so that in 1584 three Acts of Parliament were

passed in favour of Episcopacy. Yet in 1592 the Presbyterian party had so far regained their influence, that they carried a measure through Parliament which formally established Presbyterian Church government, and which has been called the Great Charter of the Church of Scotland. It repealed the Act of 1584, giving the king power to commission bishops to regulate all ecclesiastical matters in their dioceses; it gave to the General Assembly the right of meeting once every year; and it defined the rights of patrons and church courts in regard to vacant charges.

On James's accession to the throne of England (1603), he virtually suppressed the General Assembly by pro-roguing it repeatedly as soon as it had met. He had always preferred Episcopacy as most suitable to a monarchical form of government in the State, and maintained that without it there was no regular and duly authorised polity in the Church; and at length he succeeded in getting the Parliament which met at Perth in 1606 to reinstate the bishops in their former dignities, erecting seventeen sees. The General Assembly which met at Perth in 1618 adopted five articles, which were very objectionable to the Presbyterians—that the communion should be received by the people on their knees; that it might be administered in private to the sick; that baptism might be given in private; that the young should be confirmed; and that the festivals of Christmas, Easter, Ascension, and Pentecost should be observed. Charles I. on his accession (1625) resolved to carry out his father's two great designs regarding the Church of Scotland, viz., the restoration of Episcopacy, and the recovery of the Church lands and tithes. A liturgy and book of canons were now prepared by the Scottish bishops. To the former all public worship was ordered by royal proclamation to be conformed. By the latter Presbyterianism was completely subverted, and Episcopacy put in its place. When the attempt was made (July 23, 1637) to introduce the new services into public worship, there was a riot in Edinburgh, and all Scotland was roused almost to insurrection. A Covenant was prepared, based on that of 1580, which was signed by a great majority of the people. The king wished to carry matters with a high hand, but his Commissioner, finding the Covenanters too strong, offered to make great concessions. These concessions, however, were not thought sufficient by the General Assembly convened at Glasgow (November 1638); and when the Commissioner dissolved the Assembly, the members proceeded to assert their independence of the crown, repealed all the Acts of Assembly since 1606, and deposed all the bishops.

When the Scottish army met that of Charles at Kelso, a treaty was signed (June 18, 1639), ratifying the promises made to the Assembly of 1638. In August the General Assembly again met and renewed the National Covenant, which was signed by the Royal Commissioner. The result of the Civil War, begun in 1640, was that, instead of Episcopacy being imposed on the Church of Scotland, Presbyterianism was like to have been imposed on the Church of England. The Solemn League and Covenant was signed in 1643 by a large majority of the people of Scotland; and the Confession of Faith, prepared by the Assembly of Divines at Westminster, was ratified by the General Assembly (Edinburgh, August 4, 1647), and became henceforth the authorised standard of the Church. In July 1653, the General Assembly was dissolved by Cromwell; but otherwise the Church of Scotland had peace during the time of the Commonwealth. On the restoration of Charles II. Presbyterianism was overthrown.

In the month of August 1660, the king sent a letter to the Presbytery of Edinburgh intimating his intention 'to protect and preserve the government of the Church

of Scotland as it is settled by law, without violation, and to countenance in the due exercise of their functions all such ministers who shall behave themselves dutifully and peaceably.' But when the Scottish Parliament met in January 1661, the Act Rescissory was passed, destroying at a blow all the legislation of the last twenty-seven years in favour of Presbyterianism, and restoring all the old laws in favour of Episcopacy. A Remonstrance was drawn up by the presbytery of Edinburgh and the synods of Glasgow and Galloway. A letter was received by the Privy Council from the king, rescinding his letter of the year before, and declaring his intention to interpose his royal authority for restoring the Church to its right government by bishops, 'as it was by law before the late troubles.'

The Episcopal succession having died out, however, recourse was had to the English Church, and four Scottish divines having been consecrated in England, the rest of the Scottish bishops were consecrated by them. A further Act of Parliament for the restitution and re-establishment of the ancient government of the Church by archbishops and bishops was passed in 1662, by which all the laws in favour of Presbyterianism, especially the Charter Act of 1592, were rescinded, whilst the bishops were reinstated in the position they held previous to 1638, and authorised to take upon themselves the whole government of the Church. Patronage had been abolished by an Act of Parliament passed in 1649, and the Assembly had vested the right of electing ministers in kirk-sessions, with power to the congregation to appeal to the presbytery if they were dissatisfied. All ministers ordained from 1649 to 1660 had been chosen under this system, but it was now declared that they had no right to their livings unless they should receive a presentation from the patron and institution from the bishop. A Privy Council, held at Glasgow on the 1st of October, passed an act declaring that all ministers who did not submit to the bishops before the 1st of November would forfeit their livings and be interdicted from preaching. Rather than submit, nearly 300 ministers, principally in the south-western counties, abandoned their livings and homes. Some of them, however, continued to preach in their parishes, and the parishioners flocked to hear them, while the churches in which Episcopalian clergymen now officiated were deserted. This was the beginning of the Covenanting conventicles, whose worshippers were hunted by soldiery, and when caught were tortured and executed. On the 13th of November 1666, a few Covenanters overpowered some soldiers at Dalry in Galloway, marched to Dumfries, where they surprised Sir James Turner, and then went in the direction of Edinburgh. Now increased to 900, they were attacked (November 28) by Sir Thomas Dalryell at Rullion Green, and defeated, with a loss of 45 slain and 100 captured. The latter were hanged in lots. To deal more summarily with the Covenanters, the Assentory Act was passed (November 1669), declaring the king inherently supreme over all persons and in all causes. But the only effect of these severities was to render the Covenanters more determined, and to make conventicles larger and more frequent. A fresh act was passed against conventicles in July 1670, by which it was made obligatory upon all to reveal upon oath what they knew about persons attending them, and another act was passed to punish every one preaching at them with confiscation and death. Other acts imposed fines, imprisonment, and exile for having a child baptized by an ousted minister, or for being absent, without sufficient cause, for three successive Sundays from the parish church. In 1675, Letters of Intercommuning (i.e., of civil excommunication) were issued against about a hundred of those who had either preached or been

present at conventicles, declaring all guilty of the same crime who should now harbour them or converse with them, supply them with food or clothes, or extend to them any of the merest charities of life.

Notwithstanding these severe laws conventicles still continued, and it was resolved to treat the country as in a state of rebellion. 'A host of ten thousand men, of whom six thousand were Highlanders, was marched into the West Country, to seek free quarters there and promote Episcopacy in their own fashion. It was a rabble of caterans accustomed to plunder and theft—taught to regard plundering the Sassenach as a virtue, and having many of the habits of savage life.' So harassing and shameless was the oppression, that even the King felt it could not be continued, and the 'Highland' host was dismissed to their homes laden with the spoil of the campaign. On the 3d of May 1679 Archbishop Sharp was murdered on MUGGS MUIR. This desperate act was the signal for an outbreak in the West, which was ripe for rebellion. Thither the murderers had fled, and at RUTHERGLEN the ringleaders affixed to the market-cross a paper in which they denounced the various Acts of Parliament by which Presbyterianism had been overthrown, Episcopacy established, and Presbyterians ill-treated, and then they burned copies of the acts in question. From Rutherglen they went to Hamilton, thence to DRUMLOOG, and thence to Glasgow; but, after a useless skirmish with the military there, they returned to Hamilton, now increased to 4000 or 5000. At BORTHWELL Bridge they were utterly routed, but, instead of being quelled, they were only rendered more bitter in their opposition to Charles and his government. The most extreme section now received the names of Cameronians, Society-men, Hillmen, Wild Whigs. On the 3d of June 1680, at South Queensferry, a paper was seized on the person of Hall of Haughhead, declaring the perjuries and oppressions of Charles to be so shameful that he could no longer be counted a sovereign worthy of obedience, and that the throne ought to be held as vacant. On the 22d June twenty-one men made a similar declaration at the market-cross of SANGHAR, but next day a party of sixty-three was surprised and routed at AIRDSMOSS. Nothing daunted, however, the Society-men still continued to meet, and at Torwood in Stirlingshire, Donald Cargill (for whose capture, dead or alive, a large reward was offered) excommunicated the chief persecutors of Scotland—namely, the King, the Dukes of York and Lauderdale, General Dalryell, and Sir George Mackenzie. In 1681 the Test Act was passed, requiring every person in public office to swear that he acknowledged the king to be supreme in all causes and over all persons, both civil and ecclesiastical; that he would never consult about any matters of state without his majesty's express license or command; and never attempt any alteration in the government of the country. A Royal Succession Act was passed at the same time, to enable the Duke of York, who was a Catholic, to succeed to the throne. Nearly eighty ministers resigned their livings rather than sign the former, and both acts were publicly burnt in Lanark by a party of Cameronians. Multitudes were ruinously fined, sent to the West Indies as slaves or hanged, and the discovery of the Rye-house Plot in 1682 only brought new severities on Scottish Presbyterians. In May 1684 a new proscription roll of nearly 2000 names was published, in reply to which the Cameronians published an Apologetic Declaration, to the effect that they had resolved to take the law into their own hands, and avenge their sufferings on their persecutors.

On the accession of James II. (1685) an Act of Indemnity was passed, but the Presbyterians would not take the oath of allegiance, and the persecution con-

tinued. (See WIGTOWN, MUIRKIRK, and DUNNOTAR CASTLE.) In April 1686, James proposed to the Scottish Parliament a plan for giving liberties to the Presbyterians, who would have none of it, because the same liberties were extended to the Roman Catholics. The next year the King passed the Act without consent of Parliament. The moderate Presbyterians took advantage of the toleration thus obtained, and even wrote a letter thanking the King, but the Cameronians continued defiant. The last of their number to suffer before the Revolution turned the tables in their favour was James Renwick (Feb. 1688).

At the Revolution in 1688 the bishops, as a body, having declined to transfer their allegiance to the government of the Prince of Orange, while the Presbyterians gave it their warm support, Presbyterianism was re-established in room of Episcopacy. William would have pursued a more liberal and comprehensive policy, but he was obliged to yield; and when Parliament met in April 1690, its first act was to abolish the Act of Supremacy (1669); its second, to restore all the ousted Presbyterian ministers. The next act ratified the Westminster Confession of Faith, revived the Act of 1592, repealed all the laws in favour of Episcopacy, declared the government of the Church to be vested in the restored ministers, and appointed the General Assembly to meet. Patronage had also to be given up. 'It was enacted that in all vacancies the heritors and elders should nominate a person for the approval of the congregation; and that if the congregation disapproved of the nominee, they were to give in their reasons of disapproval to the Presbytery, by whom the matter was to be finally determined. In consideration of their being deprived of their right of presentation, patrons were to receive from the parish the sum of six hundred merks, and a right to all the tithes to which no other could show a title.' On the 16th of November the General Assembly met the first time for thirty-seven years. Before it rose two commissioners were appointed 'to purge out of the ministry all who should be found to be insufficient, supinely negligent, scandalous, or erroneous; and, on charges variously classed under the above heads, a large number of Episcopal clergy were deposed from their office, leading to the suspicion that Episcopacy constituted their principal crime. In short, the Presbyterians proved the Episcopalians to have been wrong in 1662 by paying them back in their own coin in 1690. The Episcopalians were still in a majority of ministers, notwithstanding all the evictions, and the Presbyterians feared that, if they were admitted to a vote in the Church courts, they might turn matters to suit themselves. But what the General Assembly would not do was done by Parliament. 'An Act for Settling the Quiet and Peace of the Church' was passed in 1693, by which all Episcopal ministers who took the oaths of Allegiance and Assurance, subscribed the Confession of Faith, and acknowledged the Presbyterian Government as the only government of the Church of Scotland, were to be admitted to a share in the government of the Church, and all who thus qualified themselves were to be protected in their churches and livings. At the Union, in 1707, there were 165 Episcopal ministers within the Establishment. The Toleration Act passed in 1712 was intended to discourage all persecution of the Non-jurors, although ostensibly limited to those who took the oaths to Government, making it lawful for them to meet and worship in their own manner (that is, giving 'protection to both clergy and laity in the free use of the Book of Common Prayer'), and exempting them from the jurisdiction of the Presbyterian Church courts. So influential were the Episcopalians in the time of Queen Anne, and so favourable their condition, that

they had sanguine hopes of a second Restoration and of their Church again becoming the national Establishment. But these hopes were dashed by the death of Queen Anne (1714), and still more by the Jacobite rising of 1715. Not only was there no more toleration for Nonjurors, but the distinction between them and Jurors was lost. Episcopallians generally were dreaded by the civil authorities as Jacobites—not without good reason—but they were also disliked by the Established Church for using liturgical services. On the one charge or the other, Episcopal ministers who had retained parish churches were deprived, chapels were shut up, the congregations dispersed, and the prosperity which the Church enjoyed came to an end.

The Moderate party gained complete ascendancy during the leadership of Dr Robertson, the historian. After his retirement from the Assembly in 1780, the Anti-Patronage party made an unsuccessful attempt to push their views, and the question remained comparatively quiescent till 1825, when an Anti-Patronage Society was formed. About this time the Voluntary Controversy began to agitate the public mind, and the Voluntaries brought the charge against the Church that she had bartered her freedom for State protection and support. These taunts were partly the cause of the high views about spiritual independence which now arose, and finally led to the Disruption. In the Assembly of 1832, overtures were presented recommending that steps should be taken to restore the call to its old place in the settlement of ministers; and although these were rejected, they were returned the following year multiplied fourfold. Once more there was a majority against them, but this was the last victory of the Moderate party. Next year (1834) the Veto Act was passed:—‘That if, at moderating in a call to a vacant pastoral charge, the major part of the male heads of families . . . shall disapprove of the person in whose favour the call is proposed, the power of presenting shall pass to the presbytery at the end of six months. This was intended to checkmate the action of certain patrons who kept benefices in their own hands for a length of time by making a series of presentations to men who, they knew, would not accept them, gaining six months each time. In regard to this matter, the Church was divided into two parties, known respectively as the Moderates and the Popular. The former went by the Act of 1690, according to which the call to a minister was given by the heritors and elders; the latter went back to the Act of 1649, according to which the call had to come from the congregation. In 1732 the Moderates had succeeded in carrying an Act of Assembly ‘anent the planting of churches;’ and at the ensuing meeting of the synod of Perth and Stirling, Ebenezer Erskine, minister of Stirling and moderator of the synod, had preached a violent sermon against that act. Having been first rebuked by the synod, Erskine was next rebuked by the Assembly (1733). The protest which he read against this action was regarded as a sign of contumacy, and the Commission was instructed to deal with him unless he withdrew it. This he refused to do, and he was accordingly loosed from his charge at the November meeting; whereupon he and other three, who had adhered to the protest, united themselves into the Associate Presbytery. See UNITED PRESBYTERIAN CHURCH *infra*.

This had been only the beginning of a hundred years’ contest regarding patronage and kindred matters. It culminated in 1843 in the Disruption of the Church. (See FREE CHURCH *infra*.) The same year an Act of Parliament was passed (known as Lord Aberdeen’s Act), according to which the presbytery, when considering objections to a presentee, were to have regard ‘to the character and number of the objectors.’ The

patronage grievance was finally removed in 1874. The General Assembly of 1869 resolved to petition Parliament for its removal, and the Government passed an Act in 1874 repealing the Act of Queen Anne, abolishing patronage, and vesting the election of ministers entirely in the free choice of congregations. This danger passed, the rock at present ahead is Disestablishment. Since the Passing of the Act of 1874, a new objection has been urged against the Church, namely, that she is now a mere sect, and that her Establishment and Endowment are a violation of religious equality, in respect that a privilege is thus given to one church to the exclusion of others, and that it is given to one at the expense of many who do not use it. At one time it was even asserted that the Established Church was in a minority, but this statement was contradicted by Principal Tulloch in a letter to the *Times* (July 6, 1878), and has since been practically abandoned. Other objections are that it violates the rights of conscience, and that it is unscriptural and injurious to religion; and it is further urged that Disestablishment would be beneficial to the Church herself, since nothing else will ever make her *free*, and that it would be the first step towards Presbyterian union.

The doctrine of the Church of Scotland, as settled at the Reformation, was Calvinism, and this was fully defined in the Confession of Faith which was adopted in 1643 as the Standard of the Church. After the Revolution two parties arose, subsequently known as Moderates and Evangelicals. The latter were distinguished by their attachment to popular interests and liberties, and by their opposition to all the opinions identified with Arminianism; the former by their steady and uniform support of lay patronage, and their opposition to the doctrinal views of the Evangelicals, on the ground that these tended to Antinomianism. There is a third and growing Broad Church party, holding opinions which show a considerable departure from the teaching of the Confession of Faith. It is not merely that individuals have expressed themselves in favour of greater latitude of opinion and greater freedom in subscription to creeds, but the moral inability of the Church to shut the mouths of such men is a practical admission that the Church cannot now be bound by the theology of the sixteenth century. It may safely be affirmed that the prosecution of a good man for *mere* heresy is now regarded by the public conscience as an act of barbarous fanaticism, to be reprobated and denounced by all right-thinking men. Even in the severer sects that have cut themselves off from the Church of Scotland, this holds true; but in a church claiming not only on *historic* but also on *actual* grounds to be distinctively ‘National,’ the assertion of the ‘principle of comprehension’ (within the limits prescribed by the acceptance of Christianity as a ‘Divine Revelation’) appears to be a sovereign duty no less than a logical necessity.

See W. Reeves, *Adamnan’s Life of St Columba* (1874), and *Culdees of the British Islands* (1864); A. P. Forbes, *Lives of SS. Ninian and Kentigern* (1874), and *Kalendar of Scottish Saints* (1872); W. F. Skene, *Celtic Scotland*, vol. ii. (1877); F. E. Warren, *Liturgy and Ritual of the Celtic Church* (1881); J. Anderson, *Scotland in Early Christian Times* (2 vols., 1881); J. Robertson, ‘Scottish Abbeys and Cathedrals,’ in *Quarterly Review* (1849, reprinted, 1891), and *Statuta Ecclesie Scotticane* (1866); Cosmo Innes, *Origines Parochiales* (3 vols., 1850–55); M. E. Walcott, *Ancient Church of Scotland* (1874), with a list of 136 authorities; A. P. Stanley, *Lectures on the History of the Church of Scotland* (1872); D. Laing’s edition of the *Works of John Knox* (6 vols., 1846–64); T. McCrie, *Lives of Knox and Melville* (1812–19; new

ed. 1855); P. Hume Brown, *Life of Knox* (2 vols., 1895); J. Spottiswood, *History of the Church and State of Scotland* (1655; best ed., 3 vols., 1847-51); G. Cook, *History of the Reformation in Scotland* (3 vols., 1811), and *History of the Church of Scotland* (3 vols., 1815); H. Scott, *Fæsti Ecclesiæ Scotiæ* (6 vols., 1866-70); G. Grub, *Ecclesiastical History of Scotland* (4 vols., 1861); J. Cunningham, *Church History of Scotland* (1863; new ed. 1882); *The Church of Scotland, Past and Present*, edited by Professor Story, (5 vols., 1891); and other works cited in our articles on MELROSE, DEER, MAY, PLUSGARDEN, etc.

At the time of the Disruption there were 924 old parishes and 42 parliamentary churches, that is, churches which had been built and sparingly endowed by Parliament in destitute districts of the Highlands. The first form of the movement for church extension was an attempt to prevail on the State to build additional churches. When this failed, the Church resolved to build them by voluntary effort, hoping to obtain endowments from the State—an effort in which Dr Chalmers took a leading part, and by which 200 chapels were added to the Church before the Disruption, 50 of which were retained by the Free Church. When all hope was abandoned of obtaining even endowments from the State, while an Act of Parliament (Sir James Grahame's Act) had been passed (1844) legalising the erection of *quoad sacra* parishes, the Church resolved to provide them also by voluntary contribution. The first Endowment Committee was appointed in 1846, with Dr Robertson as convener; and before his death, in 1860, nearly £400,000 had been raised, and more than 60 new parishes added to the Church; while in May, 1894, 387 new parishes had been endowed, besides 40 parliamentary churches erected into parishes, at an outlay, over and above the cost of the buildings, of about £1,161,000.

STATISTICS FOR 1894, AS AT DECEMBER 31, 1893.

ANNUAL INCOME.

1. *National Endowments.*

(1) From Teinds—876 parishes, estimated aggregate,	£250,000
(2) From the National Exchequer (as a partial equivalent for bishops' rents and teinds drawn by the Crown)—42 parishes in the Highlands and Islands erected in 1826, £120 each, £5040; 190, an average of £57 each, £12,000,	17,040
(3) From Burgh and other Local Funds—41 parishes, aggregate stipends, £16,266; other supplements, aggregate £7235,	23,501

2. *Funds Raised by the Church itself.*

(1) 387 New parishes endowed since 1845, aggregate annual endowment,	£54,000
(2) Church Liberty for Local Objects,	342,078
(3) Missionary and other Schemes of the Church,	150,136
(4) Revenue of Baird Trust,	21,000
(5) Association for Augmenting Smaller Livings,	5,733
	£863,488
Parishes,	1,348
Non-parochial Churches and Mission Stations,	352
Communicants,	612,411
Adherents above 18 years of age in Highland parishes,	10,486

THE FREE CHURCH OF SCOTLAND is the name assumed by the party which in 1843 withdrew from the Established Church and formed themselves into a separate religious body. From the first establishment of the Church after the Reformation there had been a constant tendency on the part of some churchmen to

claim that the Church was independent of the State, notwithstanding—nay, as some affirmed, even in consequence of—her establishment. And although the Revolution settlement appeared to give less ground for this claim than did the statutes of James I., the Westminster Confession contains the assertion that 'the Lord Jesus, as King and Head of His Church, hath therein appointed a government in the hand of church officers distinct from the civil magistrate.' It was a dispute regarding this claim that led to the Disruption of 1843, for the proper understanding of which it is necessary to go back to a point ten years previous to that event. The system of patronage, after being twice abolished by Parliament—in 1649 and 1690—was restored by the Act of 1712. According to this statute a presbytery was bound to ordain or induct to a vacant parish the qualified presentee of the patron, the call of the people being regarded as a mere form. The Evangelical party in the Church 'had always held it as a principle that the Church could not, without sin, act under any system of patronage which was subversive of the congregational call;' and that party, having now become the majority, passed in 1834 an act called the Veto Act, according to which no minister was to be intruded on a parish contrary to the will of the people.

One famous case arising therefrom has been fully noticed in our article on AUCHTERARDE; another was the Stewarton case, which arose out of the Chapel Act, passed by the same Assembly, and by the same party. According to that act, districts in connection with 'chapels of ease' were to be erected into parishes *quoad sacra*, and their ministers to acquire the status of members of presbytery. Such a parish was to be disjoined from the parish of Stewarton in 1840, when certain of the heritors applied for an interdict, which was granted, although the case was not decided by the Court of Session till January 1843. The non-intrusion party held the action of the civil courts in this case to be the most violent attack which had yet been made upon the Church, the foundation principle of which was Presbyterian—that all ministers are equal—and were prepared to accept an adverse decision as alone sufficient to drive them from the Church. In 1842 the party passed their 'Claim, Declaration, and Protest,' which set forth their interpretation of the Church's constitutional principles concerning the headship of Christ, the various encroachments on her rights and liberties by the civil courts; the impossibility, consistently with her duty to Christ the Head, of submitting to the civil supremacy which had been assumed, and the necessity she would be under, if redress were denied, of withdrawing from her connection with the State. Matters were supposed to be made worse than ever by the decision of the House of Lords (August 1842), confirming on appeal that of the Court of Session in the second Auchterarder case. By this second decision it was declared that the obligation of the presbytery to 'receive and admit' was a civil obligation, the violation of which was to be regarded and punished as a civil offence. The party held that the conditions produced by this new interpretation of the relation existing between the Church and the State (with which they always identified the civil courts, while the other party always regarded these as merely holding the legal balance between the Church and the State, and between different parties in the Church) were such that the Church could not fulfil them consistently with her principles. The crisis was produced by the decision in the Stewarton case (January 1843), and by the refusal of the Government (January) to take the Claim of Right into consideration, and the vote of the House of Commons (March) to the same

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effect. When the General Assembly met in May, the Moderator, Dr Welsh, in his own name and that of 203 other members, read a protest, and the whole party withdrew and constituted themselves the Assembly of the Free Church, with Dr Chalmers as moderator. In all 451 ministers adhered to the Protest, and resigned their livings; whilst £232,347 was contributed for the support of the Free Church during the sitting of its first Assembly. The maintenance of all the existing missions of the Establishment was boldly undertaken by the Free Church, whose organisation was finally completed by the adoption of the Sustentation Fund. Negotiations for a union with the United Presbyterian Church were abandoned in 1873 on account of the disinclination of a minority of the Free Church to modify its profession of the Establishment doctrine. The majority of the Reformed Presbyterian Church was received into the Free Church in May 1876. See Innes's *Law of Creeds in Scotland* (Edinb. 1867); Buchanan's *Ten Years' Conflict* (Edinb., new ed., 1852); Brown's *Annals of the Disruption* (Edinb. 1876); Hanna's *Memoirs of Dr Chalmers* (Edinb. 1854); G. B. Ryle's *Scotland's Free Church* (1893); on the other side, Bryce's *Ten Years of the Church of Scotland* (1850); *The Church of Scotland and the Free Church, their Relation*, etc., by Veritas (Glasg. 1870); *Memoir of Dr N. Macleod* (Lond. 1876).

STATISTICS FOR 1894.

Regular Charges,	1,048
Preaching and Mission Stations,	44
Members, including adherents over eighteen,	260,341

Income for all Objects.

Sustentation Fund,	£174,202
Congregational Fund, Missions, etc.,	491,218
	£665,420

UNITED PRESBYTERIAN CHURCH.—The foundation of this Church was laid in the Secession Church, which was formed when Ebenezer Erskine and his associates, who had been deposed in 1733, were finally ejected from their churches in 1740. In 1745, the Secession, which then numbered forty-six congregations, formed itself into a synod; but the prosperity of the Church was greatly hindered by a controversy which arose regarding the lawfulness of taking the Burgess oath, and a division took place (1747) into the Associate Synod, popularly known as the Burghers, because they allowed their members to take the Burgess oath, and the General Associate Synod, or Anti-Burghers, who objected to it. These two sects were again subdivided into four—the former (1799) into the Old Light (or Constitutional party) and New Light Burghers, the latter (1806) into the Old Light and New Light Anti-Burghers. It was the New Light sections of the two parties which united in 1820 to form the United Secession, while the Old Light sections united (1842) as the Original Seceders. Meantime, in 1752, another secession had taken place from the Established Church. The presbytery of Dunfermline had refused to induct a minister who had been presented (1749) to the parish of Inverkeithing, and against whose settlement the majority of the parishioners had protested. The General Assembly (1752) enjoined the presbytery to proceed with the induction, but six ministers, including the Rev. T. Gillespie of Carnock, absented themselves, whereupon Gillespie was deposed. In 1761 he and Mr Boston of Jedburgh, and Mr Collier of Colinsburgh, formed themselves into a presbytery for the purpose of 'giving relief from the yoke of patronage and the tyranny of the Church courts;' hence the Church thus founded was called the Relief Church. By its union

with the United Secession in 1847 was formed the United Presbyterian Church. Other schemes of union have since been inaugurated with more or less of success. In 1863, stimulated by movements in the colonies, a great 'union movement' was begun to unite the four chief nonconforming bodies in Scotland—the Free Church, the Reformed Presbyterians, the Original Secession, and the United Presbyterian Church. The union between the Free Church and the Reformed Presbyterians was consummated in 1878; that between the Free Church and the United Presbyterian Church is at present postponed, the great obstruction being the 'Voluntary' principle held by the latter.

STATISTICS FOR 1894.

Congregations,	573
Members,	188,706
Income for congregational purposes,	£280,881
For missions, benevolence, etc.,	82,041
Non-congregational,	41,284—£404,206

ROMAN CATHOLICS.—At the Reformation the Roman Catholic form of religion was completely crushed out except in the remote Highlands. It was long till the priests ventured to show themselves, much less perform their office, except under the protection of some powerful chief. The increase in the number of Roman Catholics in the country in recent times is in great measure due to the influx of Irish immigrants. The old hierarchy ended with James Betoun, Archbishop of Glasgow, who died at Paris in 1603. The clergy in Scotland were first re-incorporated into a missionary body in 1653. They were governed by Prefects-Apostolic till 1694, when a Vicariate-Apostolic was established. This arrangement continued till 1878, when the hierarchy was re-established. See Bellesheim's *History of the Catholic Church of Scotland* (Eng. trans., 4 vols., 1887-90).

STATISTICS FOR 1894.

Archbishops,	2
Bishops,	4
Priests,	369
Churches, chapels, and stations,	344
Convents, colleges, and other institutions,	78
Schools,	286
Scholars in average attendance in 1894,	43,659
R.C. population in Scotland,	363,106

THE EPISCOPAL CHURCH.—The Jacobite rising of 1745 was a death-blow to the Episcopal Church of the time. An Act of Parliament was passed in 1746, by which any clergyman of that Church exercising his functions without registering his Letters of Orders, taking the oaths prescribed by law, and praying for King George and the royal family by name, was for the first offence to be imprisoned for six months, and for the second to be transported for life. Laymen attending Episcopal worship were to be fined five pounds for the first offence, and for the second to be imprisoned two years and be deprived of all political privileges. A still more rigorous statute was passed in 1748, and, although the persecution gradually abated as years went on, especially after the accession of George III., the statutes had done their work, and before they were repealed the congregations had been reduced to less than forty. The change came on the death of Prince Charles Edward Stewart (1788), when the bishops agreed to pray for King George and the royal family by name. The Relief Bill was passed in 1792, which relaxed the severe penalties of the preceding statutes, but imposed disabilities on the clergy of Scottish ordination. An act passed in 1840, while relaxing the disabilities imposed in 1792, imposed others with

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attached penalties not in that act. Finally, an act was passed in 1864 to remove disabilities affecting the bishops and clergy of the 'Protestant Episcopal Church in Scotland.' See Russell's *Church of Scotland* (1838) and Miss Kinloch's *History of Scotland* (1888).

STATISTICS AS AT JUNE, 1894.

Bishops,	7
Working clergy,	808
Incumbencies, missions, etc.,	814
Communicants,	89,881
Church population,	105,027
Schools,	80

The BAPTISTS have existed as a denomination in Scotland since 1750, or, according to another authority, only since 1765, when a noted Baptist preacher, Archibald Maclean, was labouring in Edinburgh. The two brothers, Robert and James Haldane, who began to act as lay preachers in 1796, adopted the Baptist creed in the latter part of their career, and did much by their enthusiasm and energy to strengthen the sect.

STATISTICS FOR 1894.

Pastors,	92
Local preachers,	191
Members,	12,572
Churches and chapels,	245
Baptisms in previous year,	1,219
Sunday scholars,	12,927

CONGREGATIONALISTS is the proper name of the sect otherwise called Independents. The latter name was assumed in the apology published in England in 1644, but finding that it was also adopted by others with whose tenets they had no sympathy, they discarded it for the name of Congregational Brethren. Their principles were first brought to Scotland by Cromwell's soldiers, but made little headway till the time of Glass, who, in his work published in 1729, advocated the principles of the English Congregationalists, and the old Scots Independents were founded by Dale. The next impetus to Congregationalism was given by the revival, under James Haldane and John Aikman, begun in 1797. Before 1807, by the zeal of various itinerant preachers, eighty-five congregations had been formed and pastors ordained. There were in 1894 ninety-five congregations in Scotland.

EVANGELICAL UNION.—This denomination had no existence till 1841. In that year Rev. James Morison, minister of the United Secession Church at Kilmarnock, was deposed for heresy, chiefly for teaching the universality of the atonement and the ability of man to believe the Gospel. His father, Robert Morison (Bathgate), was deposed in 1842, and A. C. Rutherford (Falkirk) and John Guthrie (Kendal) in 1843—all for holding similar opinions. These men and a number of laymen then met at Kilmarnock and formed the Evangelical Union. In Scotland there are ninety-two congregations.

The GLASSITES are a sect who derive their name from John Glass, a minister of the Established Church at Tealing in Forfarshire, who, for teaching doctrine differing from that of the Church regarding the kingdom of Christ, was deposed in 1730. They spread to

England and America, where they received the name of Sandemanians, from Robert Sandeman, Glass's son-in-law. They hold the Voluntary principle and the independence of each congregation. The number of congregations and members is now extremely small.

The METHODISTS are a sect that took its rise from a club of Oxford students formed in 1729, with John and Charles Wesley as its most prominent members, George Whitefield joining it some years after. They accepted the name given to them in derision as correctly indicating that they lived according to the method of the Bible, but it was not till 1739 that they did anything to separate them from the Church of England—a separation which was not complete till 1784. The organization consisted of 'societies,' which were divided into 'classes,' each with a class leader; and were combined into 'circuits' occupied by itinerant and local preachers, one of whom acted as superintendent. Whitefield visited Scotland in 1741, and John Wesley in 1751; and in 1767 there were 468 members in the country. In 1894 there were regular ministers, 39; lay preachers, 127; churches and missions, 50; members, 5566; communicants, 498; Sunday scholars, 8404.

The PRIMITIVE METHODIST CONNEXION was formed in 1810, when those who wanted to hold camp meetings were excluded by the conference. Their principal difference from the Wesleysans is that they admit two laymen to one minister as delegates to the conference. In 1894 there were in Scotland 13 ministers, 104 lay preachers, 62 class leaders, 1457 members, 2766 Sunday scholars, and 37 places of worship.

The CATHOLIC APOSTOLIC CHURCH, popularly known as 'the Irvingites,' from Edward Irving, who was charged with heresy, and expelled from the Church of Scotland in 1833, and who played a prominent part among those who laid the foundation of the present work. Repudiating the name of 'Irvingites,' as if the idea of their church had originated with one man, the members of 'the Catholic Apostolic Church' do not regard that name as peculiar to themselves, but as the true designation of all the baptized, of the one Body of Christ. The believers in the reality of the spiritual manifestations that occurred on the Clyde and elsewhere about 1830, became convinced that, in the purpose of God, the original constitution of the Church was unchangeable, and that she should always possess the ministries once given for the perfecting of the saints (Eph. iv. 11-13). In 1835 the full number of twelve apostles was completed. To them were added the other ministries of the Four; and thus the present doctrine, organisation, and worship were gradually developed, as the antitype of the Mosaic worship and Tabernacle. The chief characteristics of the Church are its highly ritualistic and symbolic worship, and its elaborate hierarchical constitution—of apostles, prophets, evangelists, and pastors for the universal Church; and an angel (or bishop), with priests and deacons, for every complete congregation. Another special tenet is the nearness of the second advent of Christ, and that the realisation of it should be the one hope of all Christians. There are three fully organised churches in Scotland—in Edinburgh, Glasgow, and Dundee—besides many smaller congregations in various parts of the country.

ADMINISTRATION.

By H. A. WEBSTER, F.R.S.E., sometime Honorary Editor of the *Scottish Geographical Magazine*.

THE administrative divisions of Scotland, both civil and ecclesiastical, are far from forming a simple and well-ordered system. They have come to be what they are through the action of very various and discordant influences, the origin and operation of which are frequently lost beyond the reach even of antiquarian research. That the country as a whole was at any given period regularly partitioned off like a tract of government land in a Western State or an Australian colony into so many convenient lots, which were again divided into suitable subsections, is an idea that must at once be discarded. According to the system introduced into France after the Revolution, a department is a group of *arrondissements*, and an *arrondissement* a group of communes, the lesser divisions fitting into the larger like so many drawers in a chest. But in Scotland we have had no great revolution, and we remain mediæval and irregular, except where some modern Act of Parliament, striking athwart all obstructions like an 'improvement' street in an old-fashioned city, has, at the expense of a few additional anomalies, produced a certain amount of simplicity and uniformity. In Scotland the county is not a group of parishes, and the parish, whether civil or ecclesiastical, has no organic relation to the districts under municipal authority. Though the ecclesiastical have exercised a great influence on the civil divisions and subdivisions (as may be observed on a superficial comparison of a 13th century ecclesiastical map with a modern representation of the counties), the two systems seldom coincide.

The civil parish, or parish *quoad omnia*, is the unit area for poor-law administration and registration of population throughout the country, and for public health administration in rural districts. In 1652 there were 980 of such parishes. At the census of 1871 there were 887, ranging in area from Kilmallie with 284,060 acres, to Queensferry with 11 acres; and in population from the Barony (Lanarkshire) with 222,927 inhabitants, to Cranshaws (Berwickshire) with 142. About 160 had more than 4000 inhabitants, and 280 less than 1000. By 1891 the census number of parishes had increased to 894, mainly through changes in Glasgow and Edinburgh; the Barony had 309,812 inhabitants, and Cranshaws 85. The boundaries of parishes, except in certain modern instances, are not officially registered, and they have often been the subject of dispute before the Court of Session. Numerous modifications have been carried out by the Boundary Commissioners under the Local Government Act, 1889. A list of such changes may be found in *The Guide to Local Government*, or more fully in *Shennan's Boundaries of Counties and Parishes*. The Local Government Act, 1894, provides for further modifications. *Quoad sacra* or ecclesiastical parishes leave the civil rights and liabilities of the landowners (heritors) practically the same as before, except when they are taken as the basis of special civil enactments. The landowners of every parish are bound to provide and maintain a church, a churchyard, a manse, a glebe, and minister's grass; and by Acts passed in 1862 and 1866 they were entitled to impose an assessment for ten years for such purposes. Formerly poor relief was jointly in the hands of the heritors and the kirk-session (a mere church court); but the great majority of parishes adopted an assessment and a parochial board under the Poor-Law Amendment Act of 1845. By the

Local Government Act, 1894, the concerns of the parish were entrusted to a parish council, which not only takes the place of the parochial board, but may deal with many matters (such as land purchase, allotments, common pasturage, rights of way, scavenging, lighting, etc.) which previously were under the control of different authorities. The number of parish councillors is not to be fewer than five or more than thirty-one. Women are eligible.

Subdivisions of the counties are legally recognised only in a few instances, and that sometimes only for special purposes; thus Lanark has long been divided into an Over or Upper, a Middle, and a Nether or Lower Ward, and the Lower Ward has been subdivided into two districts, each of the four districts thus produced being a separate assessment area, and in connection with the roads a separate 'county.' Ayr in like manner retains the old threefold division into the bailiaries of Carrick, Kyle, and Cunningham. In most instances the older subdivisions, when such existed, have passed into desuetude and oblivion, or linger, as matters of every-day convenience, in the popular speech. We are still familiar with the districts of Lorne and Cowal and Kintyre, with the Merse and Lammernuir and Lauderdale; but even the antiquary is not certain as to what was meant by the Quarter (or District) of the Seven Shires of Perth.

The larger administration districts are called either counties or shires—the name of Stewartry still applied to Kirkcubright having ceased to have any practical import since the abolition of hereditary jurisdictions in 1746-47. The institution of sheriffdoms is as old at least as David I., and twenty-five are mentioned in an ordinance of 1305. Their number and grouping have been frequently modified. While on the one hand, for instance, we find Caithness, Sutherland, and Ross under the jurisdiction of the Sheriff of Inverness as late as 1641, on the other hand, Elgin and Forres were formerly separate sheriffdoms; Linlithgow and Haddington were constabularies under the sheriffdom of Edinburgh; Strathern formed a county palatine; and so on. At present the counties are thirty-two or thirty-three in number, Ross and Cromarty being treated as one, and Orkney and Shetland as two, or as one for different purposes. Ross, an ancient hereditary sheriffdom, has still a court of lieutenancy of its own and separate commissioners of supply. The detached districts, which look so strange on the modern map (where the two counties are usually coloured differently), were annexed to Cromarty at the instigation of Viscount Tarbat, afterwards Earl of Cromarty, who wished to have jurisdiction over the various parts of his estates. By the Reform Act of 1832 those detached portions of Ross, and similar *enclaves* in other counties, were for parliamentary representation made part of the county in which they are situated; and the County Police Act, 1857, the General Assessment Act, 1868, etc., have followed the same rule. For purposes of registration the areas of all counties have been altered since 1854, and thus we have registration counties as distinguished from civil counties. Part of a police burgh may be transferred from one county to another for the purposes of the Police Acts of 1862, etc. Boundaries of counties have been modified by the Commissioners under the Act of 1889. The following table shows approximately the area of the civil counties:—

ADMINISTRATION.

TABULAR STATEMENT SHOWING (APPROXIMATELY) THE AREAS OF LAND, WATER, AND FORESHORE OF THE COUNTIES OF SCOTLAND.

	AREA IN STATUTE ACRES.			TOTAL AREA OF COUNTY.	
	Land.	Water.	Foreshore.		
Shetland and Orkney, .	593,365	19,295	25,683	638,343	
Caithness,	438,873	7,271	2,718	448,867	
Sutherland,	1,297,849	49,185	12,812	1,359,846	
Ross	1,768,560	65,553	27,454	1,861,572	{including 440,822 acres, the area of the Islands of Ross-shire.
and Cromarty,					
Inverness,	201,444	8,656	7,224	217,324	{including 29,997 acres, the area of the Islands of Cromartyshire.
Nairn,	2,616,545	91,693	58,841	2,767,079	{including 821,579 acres, the area of the Islands of Inverness-shire.
Elgin,	124,968	950	1,988	127,906	{including 19,867 acres, the area of the Islands of Nairnshire.
Banff,	304,606	3,761	3,979	312,346	
Aberdeen,	410,112	2,146	1,533	413,791	
Kincardine,	1,251,451	7,059	3,588	1,262,097	
Forfar,	245,847	1,463	1,385	248,195	
Perth,	560,186	3,179	6,486	569,851	
Fife,	1,617,808	38,274	8,608	1,664,690	
Kinross,	314,952	1,082	12,338	328,372	
Clackmannan,	46,487	3,327	—	49,814	
Stirling,	30,477	945	455	31,877	
Dumbarton,	286,338	8,947	3,294	298,579	
Argyll,	157,289	14,321	3,814	175,424	
Bute,	2,056,402	36,056	41,816	2,134,274	{including 398,890 acres, the area of the Islands of Argyllshire.
Renfrew,	139,432	895	3,670	143,997	
Ayr,	156,785	3,622	2,021	162,428	
Lanark,	722,229	6,957	6,076	735,262	
Linlithgow,	564,284	4,557	27	568,868	
Edinburgh,	76,807	456	3,858	81,120	
Haddington,	231,724	878	2,323	234,926	
Berwick,	173,447	190	5,505	179,142	
Peebles,	294,805	1,557	799	297,161	
Selkirk,	226,899	970	—	227,869	
Roxburgh,	164,545	1,979	—	166,524	
Dumfries,	425,656	2,807	—	428,463	
Kirkcudbright, . . .	680,217	5,302	20,427	705,946	
Wigtown,	574,588	7,679	27,361	609,628	
	310,747	2,829	14,330	327,906	
	10,062,482	403,846	310,413	19,776,741	

The highest county official is the Lord-Lieutenant, appointed by the Crown, and generally selected from the local nobility or gentry. The office, first created by the Militia Act, 42 George III. (1782), is honorary, and involves little real participation in the administration of the county, though the holder is also high sheriff, a member of the police committee, etc. A much more responsible and efficient functionary is the salaried sheriff, appointed by the Crown for the discharge, either personally or by means of his legal substitutes, both of judicial and administrative duties. He is not required to be resident in his sheriffdom, but he must hold a certain number of sittings in the county or counties entrusted to him. By Act 16 and 17 Vict., cap. 92 (1853), it was arranged that as sheriffdoms fell vacant, Sutherland should be joined with Caithness, Banff with Elgin and Nairn, Linlithgow with Clackmannan and Kinross, Dumbarton with Bute, Haddington with Berwick, Roxburgh with Selkirk, and Wigtown with Kirkcudbright. But in 1870, by 33 and 34 Vict., cap. 86, a new grouping was introduced:—Aberdeen, Kincardine, Banff; Inverness, Elgin, Nairn;

Orkney, Shetland, Caithness; Sutherland, Ross, Cromarty; Midlothian, Linlithgow, Haddington, Peebles, Wigtown, Kirkcudbright, Dumfries (Sheriffdom of Dumfries and Galloway); Stirling, Dumbarton, Clackmannan; Renfrew, Bute.

Many of the duties of the sheriff (who is the special guardian of the public peace) can be discharged by the sheriff-substitutes, who must reside within the county, and must not be absent more than a fortnight at a time. They are judges in first instance in all sheriff courts. Among their administrative functions are arranging for the election of members of Parliament and return of writs, summoning jurors for causes civil and criminal in the supreme courts, striking the fairs' prices, and determining the boundaries of police and improvement burghs. The procurator-fiscal is the public prosecutor in the inferior courts; and, as in the sheriff court he makes inquiry into cases of sudden death, he is now the nearest representative in Scotland of the English coroner, though Scottish coroners appear down to the time of Charles II. Justices of Peace (J.P.), appointed by commission under the Great

Seal, are unpaid officials—elected without regard to rank or property—on whom devolves a large amount of administrative work. They hold quarter sessions on the first Tuesday of March, May, and August, and the last Tuesday of October; they take affidavits (depositions) and declarations, sign warrants, try petty criminal cases, regulate public-house licenses, license retreats for habitual drunkards, look after weights and measures, have the right of performing the marriage ceremony, etc.

Commissioners of Supply, incorporated in 1867-68 (31 and 32 Vict., cap. 82, sect. 8), were entitled to levy county rates. Originally instituted to collect the national revenue, they settled the incidence of the land-tax, managed the county expenditure, and controlled the county police.

By the Local Government Act, 1889, a County Council was established in every county, to be entrusted with the management of the administrative and financial business of the county. It had transferred to it the duties of commissioners of supply, county road trustees, public health authorities, administrative powers and duties of justices of the peace, etc.

The only true municipal corporations in Scotland are the royal burghs. The origin of these is in great measure lost in the obscurity of our early history, though recent research has considerably extended our knowledge in regard to them. Their name implies that they were created by royal charter, but in many cases there is no evidence to show the date of the first charter, or indeed to prove that a charter of erection ever really existed. They thus fall into two groups—burghs by charter and burghs by prescription. The reign of David I. was a period of rapid growth in this department, and though the charters signed by this monarch are in many cases lost, those of his successor, William the Lion, take the form of confirmations of the privileges he had bestowed. Among the burghs which claim David as their founder are Edinburgh, Rutherglen, and Perth. At present the chief characteristic of a royal burgh is that it is governed by a special body of citizens elected for this purpose by the citizens themselves, and that in most matters of purely local concernment it can exercise a wide discretion. But originally a burgh, while enjoying a corporate existence, enjoyed it rather as a great trading company which possessed a monopoly within a certain district or number of districts. To obtain the freedom of the burgh meant in early times to obtain the freedom of carrying on one's trade or disposing of one's goods. Thus the burgesses of Edinburgh obtained 'not only exemptions and freedoms within their walls, but an exclusive right of trade and manufacture over a district extending from Colbrandspath or Edgebucklin Brae on the east to the water of Avon on the west, corresponding to what was afterwards the sheriffdom of Edinburgh Principal' (Cosmos Innes). A charter of confirmation by David II. under the Great Seal, dated 28th March, 1364, which is considered to summarise the general privileges of royal burghs, (1) grants to the King's burgesses throughout Scotland free liberty to buy and sell everywhere within the liberties of their own burgh, expressly forbidding any of them to buy and sell within the liberties of another without license obtained; (2) prohibits bishops, priors, and kirkmen, earls, barons, and others of the temporal estate from buying wool, skin, hides, or other kind of merchandise under any pretext or colour; (3) prohibits all persons of whatsoever estate from selling anything except to the merchants of the burgh within the liberty of which they resided, and requires them to present every kind of merchandise at the market cross of burghs that the merchants might buy them and the King's customs be

paid; (4) prohibits outland merchants or strangers arriving in ships from selling merchandise to other than burgesses of royal burghs, and from buying merchandise except from the hands of royal burghs, under pain of the King's unlaw. (See *Miscellany of the Scottish Burgh Records Society*, p. xxv., 1881.)

As early as the reign of David the royal burghs of the North of Scotland formed a hanse (*ansa*) or federation, whose meetings could be held whenever and wherever they chose. The four burghs of Edinburgh, Berwick, Roxburgh, and Stirling already formed a convention or court in the 13th century, if not at an earlier period; and when Berwick and Roxburgh fell into the hands of the English their places were taken by Lanark and Linlithgow. Their meeting-place—previously shifting, though most usually at Haddington—was in 1454 fixed at Edinburgh. In 1487 a general Convention of Royal Burghs was constituted by Act of Parliament 'for dealing with the welfare of merchandise, the gude rule and statutes for the common profit of burrows, and to provide for remedie upon the skaith and injuries sustained within the burrows.' In 1633 Parliament confirmed the monopolies and privileges of the burghs; but in 1672 their exclusive right to buy and sell was limited to wine, wax, silks, spices, wood (wald), and other materials for dyeing; and trade in home-grown corn, 'cattell, nolt, sheip, and horse, coal, etc.,' and all other native commodities of the kingdom were declared leisom (lawful) to burghs of regality and barony. This infringement of their long-established pre-eminence was not accepted by the royal burghs without many and grievous protests; and they afterwards managed in 1689 to get the new law somewhat modified in their favour. The contest between the traditional and the progressive party continued through the rest of the 17th century and on into the next. By article 21 of the Treaty of Union it was provided that 'the rights and privileges of the royal burroughs in Scotland as they now are do remain entire after the union and notwithstanding thereof; and in 1835 the Commissioners on Municipal Corporations in Scotland had still to report that 'the law in so far as it rests upon statutes continues the same at the present day, with only very trifling modifications; and courts of justice could not even now refuse giving effect to it.' But the world had moved far in advance of the statute-book, and the attempt to enforce these exclusive privileges by means of the law courts was seldom made by any of the burghs. The recommendation of the Commissioners that the obsolete enactments should be abrogated in their entirety, received effect by Act 9 Vict., cap. 17, passed on 14 May, 1846.

As they at present exist the Royal Burghs are a strangely incongruous company, ranging in population from Glasgow and Dundee, the two largest cities in the country, to petty villages like Culross, Earlsferry, and Kintore. There is something ludicrous in such a community as that of Culross—380 souls all told, inhabiting 96 houses, and holding real property to the value of £1645, being governed by a provost and 9 councillors, who have to administer a corporation revenue of £52, while Glasgow with its population of 658,193, its real property valued at £4,208,000, and its revenue of nearly £50,000, is governed by a provost and 77 councillors. At the same population rate as Culross the larger city ought to have 15,000 councillors. A list of the Royal Burghs can be found in *Oliver & Boyd's Almanac*. Coatbridge obtained the municipal privileges of a Royal Burgh by Act of Parliament in 1885.

The Government of Royal Burghs is regulated by the Municipal Acts 3 and 4 Wm. IV., cc. 76 and 77, and 31 and 32 Vict., c. 108. The qualified burgesses—practically since 1876 all resident ratepayers—annually

ADMINISTRATION.

elect councillors by ballot and the council by open voting chooses the magistrates. The number of magistrates and councillors is fixed by the 'sett' or usage of the burgh (see the Complete Copies registered in the Books of the Convention in the *Miscellany* already quoted). In certain burghs a 'Dean of Guild,' or architectural inspector, is appointed by the council. Though the magistrates of Royal Burghs have nominally the same civil and criminal jurisdiction within the burgh as the sheriff, they are practically confined for the most part to the trial of police offences.

A lower class of burghs, known as Burghs of Regality and Burghs of Barony, 'were originally erected by the Crown out of territory belonging to lords of regality and barony respectively.' The Municipal Commission, 1835, enumerated 12 burghs independent of superior; 7 holding of a superior, but possessing charters; and 24 holding of a superior, and without elected magistrates. The magistrates, when such exist, are in some cases chosen by the superior, in others by electors.

The name of Police Burgh is given to towns and places of more than 700 inhabitants, incorporated under the General Police Acts of 1850 or 1862, under a Special Local Police Act, or under the Burgh Police Act of 1892. In 1879 the earlier acts had been adopted in whole or in part by 83 burghs and places other than Royal or Parliamentary Burghs. By 1881 this number had increased to 88, and the total, including Royal and Parliamentary Burghs, was 199 in 1894. As the Police Act may be adopted by Royal Burghs, by Burghs of Regality and Barony, and as the limits for the Police-Burgh may be fixed by the sheriff or sheriffs so as to include more than the original burgh, and to extend into another county, we have very different areas represented by the same geographical name. By the Burgh Police (Scotland) Act, 1892, the management of an almost countless variety of details in regard to the administration of the burghs was put into the hands of the Commissioners appointed by the Act. They have control of the police force, lighting, cleansing, paving, and maintaining streets, erection of new buildings, sewage, water supply, etc.

Parliamentary burghs were up till 1885 all the Royal burghs with the exception of Auchtermuchty, Earlsferry, Falkland, Newburgh, Rothesay, and Peebles, and the fifteen burghs constituted for the purpose of Parliamentary representation by the Reform Acts of 1832 and 1868.

For further information on the administration of Scotland, see the admirable summary, *Local Government* (Edinb. 1880), by Henry Goudy and William C. Smith, and *The Guide to Local Government in Counties, Parishes, and Burghs* (2nd ed., Edinb. 1895).

Poor Relief.—The civil parish is in all cases the unit of poor-law administration, but two or more adjoining parishes may be conjoined. The local authority is now the parish council. Up to 1895 it was the parochial board, comprising so many nominees of the kirk-session, and so many persons elected by the ratepayers. The central authority is the Board of Supervision, consisting of the Lords Provosts of Edinburgh and Glasgow, the Solicitor General, the Sheriffs of Perth, Renfrew, and Ross, and three nominees of the Crown. The parochial board imposed and levied the poor rate, but not according to one general system. For the year ending 14th May, 1894, the total income of the parochial boards of Scotland was £1,019,935, of which £738,396 was raised by assessment, while £44,620 was from voluntary contributions, church collections, etc., and £236,919 from Grants in Aid. The expenditure was £939,003, of which £706,913 was on maintenance of poor, £47,011 on medical relief, £135,586 on management, and £690 on law expenses. Since the Board of

Supervision was formed (August, 1845) a large number of parishes have abandoned the method of voluntary contributions for assessment. While the assessed parishes in 1845 were only 230 against 650 with voluntary contributions, the assessed in 1894 numbered 840 and the voluntary 45. 'In 661 of the assessed parishes the funds are raised by an equal rate upon owners and occupants respectively, and in 166 there is a classification of occupants in terms of the 36th section of the Act 8 and 9 Vict., c. 83. In 13 parishes the assessment is still levied according to established usage.' The number of parishes that have poorhouses singly or in combination is 480. The sixty-six poorhouses in operation provide accommodation for 15,360 inmates, an increase of 2848 since 1864. The following figures show the general growth of expenditure:—

Year.	Expenditure for Relief and Management of the Poor.	Valuation as Returned by Inspector of Poor.	Rate of Expenditure per Head of Population.
	£	£	s. d.
1847	433,915	10,053,142	3 1½
1850	534,353	10,602,403	3 8½
1855	584,823	11,517,838	3 11½
1860	643,303	13,428,403	4 2½
1865	731,855	15,598,386	4 7
1870	813,390	17,804,036	4 10½
1875	804,916	19,571,152	4 7
1880	849,064	22,263,612	4 7
1885	830,641	23,549,869	3 10½
1890	841,952	23,583,775	3 7½
1891	841,645	23,924,382	3 7½
1892	871,306	23,979,566	3 8½
1893	873,947	24,180,483	3 8
1894	894,500	24,641,792	3 7

While the expenditure has thus increased, the number of registered and casual poor has been decreasing. If we unite the two classes and include their dependants, we find the 'same-day' total for 1866 to be 126,042, and for 1894, 93,682. One department in which the cost has been progressively increasing for many years is the maintenance of lunatic poor—the sum thus expended in 1868 was £113,676, in 1894 £265,258. The average annual cost of maintenance for each registered pauper in 1859 was (including lunatics) £6, 10s. 7½d.; in 1894, £9, 10s. 11½d.

Lunacy.—In Scotland the chief supervision of the insane is vested in the Commissioners of Lunacy, whose action is controlled by Acts 20 and 21 Vict., c. 71; 24 and 26 Vict., c. 54 and 59; and 29 and 30 Vict., c. 51. According to Table I. of Appendix A. in the 36th Annual Report of the Board of Commissioners, the number of lunatics in Scotland has varied as follows:—

1858, . . .	5769	1886-90, . . .	11,382
1860-65, . . .	6353	1891, . . .	12,280
1866-70, . . .	6975	1892, . . .	12,469
1871-75, . . .	7785	1893, . . .	12,725
1876-80, . . .	8878	1894, . . .	12,950
1881-85, . . .	10,237		

According to the census returns, the number of the insane was—for 1871, 6027 (2925 males and 3102 females), for 1881, 8406 (3939 males and 4467 females), and for 1891, 10,445 (4918 males and 5527 females). The ratio to the population, according to the first authority, was, in 1859, 157 per 100,000, in 1881, 267, and in 1891, 306. For the latter dates the census rates are 225 and 259 per 100,000. It is pretty generally allowed that the increase is for the most part only apparent, and due to improved systems of registration. The subject is discussed in detail in a supplement to the 36th Annual Report of the Commissioners.

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Local Taxation.—The interest recently developed in local government has led to special inquiry in regard to

local taxation. The results of Mr Skelton's investigations, published in 1895, are sufficiently striking:—

Authorities.	1848.			1893.		
	Lands.	Buildings.	Total.	Lands.	Buildings.	Total.
	£	£	£	£	£	£
Urban,	—	150,000	180,000	—	1,580,000	1,722,000
Rural,	138,000	22,000	178,000	310,000	170,000	628,000
Parochial,	325,000	162,000	545,000	364,000	825,000	1,429,000
Totals,	463,000	334,000	903,000	674,000	2,575,000	3,780,000

In 1848 the average rate in the £ of all rates for the whole of Scotland, calculated on the gross valuation, was 1s. 9½d., in 1893 it was 3s. 1½d. In 1893 the distribution was—urban authorities, 2s. 7½d.; rural authorities, 11½d.; parochial authorities, 1s. 2½d.

Sanitary Enactments.—The Act of 1427, with regard to lepers (to quote from Mr Skelton), is probably the first sanitary provision in Scotland of which there is any record. A foundation for a system of sanitation was laid by the Burgh Act of 1833, but comparatively little was done by new legislation till the Public Health Act of 1867 (amended 1879, etc.), provided for the erection of sanitary districts both rural and urban, and for the appointment of proper officers for the inspection and removal of nuisances, the erection of permanent hospitals, the prevention and mitigation of diseases, the regulation of common lodging-houses, and the management of sewerage, drainage, and water supply. In burghs the rates are levied in the same manner as the police rate, or, where there is no police rate, in the same manner as the poor rate. In rural districts the rate used to be levied by the parochial board, since 1889 it is levied by the county council. The assessments have risen in counties from £6647 in 1869 to £69,148 in 1893, and the expenditure in burghs from £181,771 in 1867 to £454,706 in 1893. The Board of Supervision (the chief authority up to 1895) between 1875 and 1894 recommended loans to local authorities under the Public Health Acts to the amount of £1,790,027 (£1,210,849 for water works, £356,173 for sewerage and drainage works, £167,293 for erection of hospitals, and £52,702 for water and drainage combined).

Government.—To tell by what gradual changes the different portions of Scotland were united under a central government, and by what varying methods the mutual relations of rulers and subjects were adjusted, belongs to the chapter on Scottish History. To understand the present position of the country, it is enough to recall that after being for 105 years linked together by allegiance to the same dynasty, the twin realms of England and Scotland were merged in the larger unity of Great Britain by the Act of Union in 1707. The last session of the Scottish Parliament closed on 25 March; and the First Parliament of Great Britain with Scottish Representatives was opened on 23 October. A bill for 'rendering the Union of the Kingdoms more complete,' abolished in 1708 the Scottish Privy Council. Before long a Secretary of State for Scotland, with a seat in the Cabinet, was appointed in addition to the two Secretaries for England; but the office, which had frequently been almost nominal, was allowed to lapse in 1746, and the law officers of the Crown, the Lord Advocate and Solicitor-General, became, along with the Justice-Clerk, the principal advisers of the Government, which, however, down to 1827, continued to be generally represented by a 'Scottish Manager.' The political functions of the Lord Advocate, though he has no seat in the Cabinet, gradually increased, and for a time

he and the Home Secretary of Great Britain were practically ministers for Scotland. Complaints about the neglect and mismanagement of Scottish business were often made; and at length, in 1885, a Secretary for Scotland was appointed, without interfering with any of the previous functions of the Lord Advocate. The other officers of state for Scotland are the Lord Privy Seal, the Lord Clerk Register, the Lord Advocate, and the Lord Justice-Clerk, who act as commissioners for the custody of the Regalia, preserved in Edinburgh Castle.

Peerage.—The Union Roll laid before the House of Lords, 22 Dec. 1707, is still with certain amendments the document which regulates the precedence of the Peers of Scotland, and is called, with certain omissions and additions, at all elections of Representative Peers. It originally contained 154 Peers (10 Dukes, 3 Marquesses, 75 Earls, 17 Viscounts, and 49 Barons); but though 12 Peers have since been added, the number has been gradually reduced by certain peerages becoming extinct or dormant, and as the Crown did not receive at the Union the prerogative of creating new Scottish Peerages they are destined to become yet fewer. At present there are 87 Scottish Peers (8 Dukes, 4 Marquesses, 44 Earls, 5 Viscounts, 24 Barons, and 2 Baronesses). A Scottish Peer may also be a Peer of England, and as such have a permanent seat in the House of Lords, where, however, he may appear in virtue of a much lower title than that by which he is generally known. Thus the Duke of Athol is in the House merely Earl Strange, the Duke of Buccleuch is Earl Doncaster. Or, on the other hand, the title by which he sits in the House may be a higher one than that by which he ranks in the Scottish Peerage. Thus the Marquess of Ailsa is entered in the Scottish Roll as Earl of Cassilis.

Parliament.—The Scottish nobility, since the Union, return from among their own number 16 peers to represent them in the Upper House of the Imperial Parliament, and since 1831 no attempt has been made by the governments to influence their decisions by sending down, as was done by Walpole and his successors, a King's or Court List. Little political significance is now attached to the election. Between the Union and the date of the Reform Bill the freeholders of the counties, who amounted even at the last to only 3211 in number, returned to the House of Commons 30 members; the city of Edinburgh returned 1, and the other royal burghs, 65 in number, and classified into districts, returned 14—a total of 45. The Parliamentary Reform Act in 1832, by conferring the franchise on owners of property of £10 a year and certain classes of leaseholders, added at the first impulse 29,904 to the aggregate constituency of the counties; but it allowed them only the same number of representatives as before—erecting Kinross, Clackmannan, and some adjoining portions of Perth and Stirling into one electoral district, conjoining Cromarty with Ross and Nairn with

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Elgin, and assigning one member to each of the other counties. The same Act erected various towns into parliamentary burghs, and bestowed the burgh franchise on £10 householders as in England, thus increasing the burgh constituency from a pitiful number to upwards of 31,000, giving them the election of 23 instead of 14 representatives. The total number of members of Parliament for Scotland was thus raised to 53. By the Scottish Reform Act of 1868 this was increased to 60, three new members being given to the counties, two to the universities, and two to cities and burghs. The county franchise was at the same time extended to owners of lands and heritages of £5 yearly value, and to occupiers of the rateable value of £14 (thus at once increasing the voters from 50,882 to 76,796); and the burgh franchise to all occupiers of dwelling-houses paying rates, and to tenants of lodgings of £10 annual value, unfurnished (thus at once increasing the voters from 59,560 to 163,453). In 1884 the county electors were 102,155 (about 1 in 20 of the population), and the burgh electors 237,283 (about 1 in 7½ of the population). The universities had 13,021 electors (Edinburgh and St. Andrew's 6583, and Glasgow and Aberdeen 6438). In 1884 a new measure for extending the franchise, first introduced by Mr Gladstone on 28 February, 1884, was the cause of a great struggle between the House of Lords (who were hostile to the change) and the House of Commons and the country at large. It was ultimately passed on 12 Dec., and, as the 'Representation of the People Act of 1884,' provide for a uniform household franchise and a uniform lodger franchise throughout the United Kingdom for both burgh and county, the right of voting going with the occupation of any land or tenement of a clear yearly value of £10. The early part of Session 1885 was devoted to the passing of a Redistribution Bill, urged by the House of Lords as an integral part of the franchise-extension scheme. In 1894 the county electors numbered 349,598, and the burgh electors 284,317 (inclusive of electors—Edinburgh and St. Andrew's, 8914; Glasgow and Aberdeen, 8649).

The counties of Argyll, Banff, Berwick, Bute, Caithness, Clackmannan and Kinross, Dumbarton, Dumfries, Edinburgh, Elgin and Nairn, Forfar, Haddington, Inverness, Kincardine, Kirkcudbright, Linlithgow, Orkney and Shetland, Peebles and Selkirk, Ross and Cromarty, Roxburgh, Stirling, Sutherland, and Wigton, have each one representative; those of Aberdeen, Ayrshire, Fife, Perth, and Renfrew, each two; Lanarkshire has six. The following groups of burghs have one each:—Ayr Burghs (Ayr, Campbeltown, Inverary, Irvine, Oban), Dumfries Burghs (Dumfries, Annan, Kirkcudbright, Lochmaben, Sanquhar), Elgin Burghs (Elgin, Banff, Cullen, Inverurie, Kintore, Peterhead), Falkirk Burghs (Falkirk, Airdrie, Hamilton, Lanark, Linlithgow), Hawick Burghs (Hawick, Galashiels, Selkirk), Inverness Burghs (Inverness, Forres, Fortrose, Nairn), Kilmarnock Burghs (Kilmarnock, Dumbarton, Port-Glasgow, Renfrew, Rutherglen), Kirkcaldy Burghs (Kirkcaldy,

Burntisland, Dysart, Kinghorn), Leith Burghs (Leith, Portobello, Musselburgh), Montrose Burghs (Montrose, Arbroath, Brechin, Forfar, Bervie), St. Andrews Burghs (St. Andrews, Easter Anstruther, Wester Anstruther, Crail, Cupar, Kildrenny, Pittenweem), Stirling Burghs (Stirling, Culross, Dunfermline, Inverkeithing, Queensferry), Wick Burghs (Wick, Cromarty, Dingwall, Dornoch, Kirkwall, and Tain); the Burghs of Aberdeen and Dundee have each two, Edinburgh four, Glasgow seven, Greenock, Paisley, and Perth, one; the Universities of Edinburgh and St. Andrew's, Glasgow and Aberdeen, one.

Law Courts.—The Supreme Civil Court, a court both of law and of equity, is the Court of Session. This originated in the reign of James V., and was modelled on the Parliament of Paris, but it was modified at the Union, and has been materially altered since the commencement of the 19th century. An account of its constitution, together with notices of the other metropolitan civil courts, has been given in our article on Edinburgh, vol. ii., pp. 531, 532. The Supreme Criminal Court is the High Court of Justiciary, consisting of the Lord Justice-General or the Lord Justice-Clerk and five other judges, who also are judges of the Court of Session. This court sits in full at Edinburgh, as occasion requires, for the three Lothians and for reference cases from the rest of Scotland; and it holds regular circuit courts, by distribution of its members, at Jedburgh, Dumfries, Ayr, Glasgow, Inveraray, Stirling, Perth, Aberdeen, Dundee, and Inverness. In 1894 there were 407 members in the Faculty of Advocates, but a large proportion of this body abstain from all professional work. The inferior courts of law are the baillie courts in burghs, and the sheriff courts and justice of peace courts in counties. The magistrates of burghs vary in title and number, according to the set of each burgh; but the magistrates of counties comprise, in every instance, lord-lieutenant, deputy-lieutenants, sheriff, sheriff-substitute, and justices of peace.

Police Force.—The police of Scotland is divided into county police and burgh police. Up to 1889 the Commissioners of Supply managed the police force in each county by means of a police committee. Their duties have been transferred to the County Council. The necessary expenses are defrayed by a special assessment. The Council are subject to the control of the Government; and if the Crown inspector refuse a certificate of efficiency to the force of any district, the Treasury subvention is refused. Burghs with a population under 7000 are required to consolidate with the county in order to get the subvention, and no such burgh now maintains a separate force.

In certain burghs the police is regulated by special local acts, but in most cases burghs with a population of 7000 or upwards maintain their constables under the terms of the General Police and Improvement Act of 1862. In 1879 there were thirty-three, in 1894 thirty-two, burghs with a separate police force. The following figures show the number and cost of this department in county and burgh:—

Year.	Numbers.			Cost.		
	In Counties.	In Burghs.	Total.	In Counties.	In Burghs.	Total.
1879	1322	2340	3662	£119,015	£185,956	£304,972
1881	1371	2377	3748	125,580	199,560	325,140
1882	1402	2385	3787	131,372	200,347	331,719
1883	1480	2452	3932	133,206	208,455	341,661
1891	1604	2826	4430	151,436	238,658	390,094
1892	1616	2885	4501	157,156	260,820	417,977
1893	1645	2894	4539	156,412	264,548	420,960
1894	1744	2988	4741	162,569	271,868	434,437

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Crime.—The criminal law of Scotland has gradually been assimilated to that of England, though as late as 1855 a return obtained at the instance of J. Boyd Kinneir showed that capital punishment was retained in Scotland for twenty-five crimes for which it was not

inflicted in England. An Act for the collection of Judicial Statistics of Scotland was passed in 1869; and the first report was presented by John Hill Burton in 1870. The following tables show the satisfactory progress the country has made in the repression of crime:—

	Average 1836-40.	1869.	1879.	1889.	1890.	1891.	1892.	1893.	Average 1889-93.
Called for trial, . . .	3350	3510	2945	2380	2437	2480	2405	2515	2444
Tried,	2789	2922	2357	1988	2053	2086	2017	2127	2054
Convicted,	—	2592	2091	1737	1825	1823	1778	1903	1813
Sentenced to death, . .	2 $\frac{3}{5}$	—	—	5	5	1	3	—	3
Penal servitude, . . .	—	217	182	118	101	87	78	93	95

Offences.	Average 1836-40.	Average 1846-50.	Average 1879-83.	1893.			Average 1889-93.
				Males.	Females.	Total.	
Against person,	751	835	800	507	50	557	730
Against property, with violence, . .	530	537	525	479	31	510	521
Against property, without violence, .	1676	1883	954	511	196	707	889
Against property, malicious,	47	64	100	17	2	19	45
Forgery, etc.,	120	137	52	25	4	29	33
Other offences,	266	239	126	68	13	81	96
	3390	3695	2557	1607	196	1903	2314

If we make allowance for the increase of population between 1840 and 1893, we find that, if no improve-

ment had taken place, 5305 cases might have been expected at the latter date.

SCOTTISH LANGUAGE AND LITERATURE.

By the late JOHN M. ROSS, LL.D., Editor of the *Globe Encyclopedia*.

THE 'Scottish language' properly means the Gaelic dialect of Celtic used by the Scots after their settlement in North Britain among the Picts; and down to the 15th century the phrase *lingua Scotica* never denoted anything else. During the 15th century the recognition of the Irish origin of Gaelic led to its being also called *lingua Hibernica*, or, in the vernacular, *Yrishe* or *Ersch* (mod. *Erse*). Long before this, however, the name 'Scottish' had been applied to the whole people of Scotland, Teutonic and Celtic alike; and as the Teutonic became more and more the dominant race, the term 'Scottish' came in time to be applied to the Anglic dialect of the Lowlands. This transference of name was all the more easily made that the lapse of years and the effects of political strife had thoroughly alienated the Angles of Lothian from their brethren of Durham and York. The first native writer who called the dialect of the Lowlands 'Scottish' was Gavin Douglas in the year 1516, though it had been so designated as early as 1498 by Don Pedro de Ayala, the Spanish promotor at the court of James IV., in a letter to his sovereigns, Ferdinand and Isabella. Before the close of the 16th century this use or abuse of the term had become universal in the Lowlands, and has ever since been recognised in England.

This article is strictly confined to a notice of that Anglic dialect commonly designated 'Lowland Scotch.' To understand its origin it is necessary to remember that till the middle of the 10th century the kingdom of Scotland embraced no territory south of the Forth. Strathclyde was a Cymric principality, and the Earldom of Lothian was part of the English kingdom of Northumbria. This earldom, which included the whole south-east of the present kingdom of Scotland from Liddesdale to Stirling, passed by grant to the Scottish kings in 975, who held it on the same tenure as the Northumbrian earls; and thus the Anglic dialect obtained a footing within the boundaries of the Scottish kingdom. In the 11th century a powerful impetus was given to the spread of English by Margaret, sister of Eadgar Ætheling, and wife of Malcolm Ceanmor. Her own dialect would, of course, be Wessex or Southern English, but the neighbourhood of Lothian, and the long exile of Malcolm in Northumbria, would irresistibly determine the form of English that would be adopted in Scotland. The insecure and fluctuating rule of the Norsemen along the north-east coast, from Caithness to the Firth of Tay, during the 9th and 10th centuries, is sufficient to account for those local peculiarities of diction which lend a curious flavour to the sub-dialects of Buchan and Forfar, but in no way diminish their right to be considered the legitimate offspring of an English mother. In fact, the majority of these peculiarities are more attributable to Celtic than to Scandinavian influences.

Of the earlier history of the Anglic dialect north of the Tweed we are wholly ignorant. How it grew and spread, what obstacles it encountered, and in what ways it was modified, we can only conjecture. This arises from the paucity, one might almost say the total absence, of literary monuments. The inscription upon the Ruthwell Cross in Dumfriesshire (7th century), and some words interspersed in the Latin charters and laws of David, William the Lyon, and their successors, constitute the entire remains of this speech between the 7th and the 14th centuries. These, however, are sufficient to prove that it approximated in its grammatical

forms to the Scandinavian and Frisian rather than to the Saxon of Wessex. The same remark holds good of the whole Anglic dialect of Northumbria.

Between the 11th and the 14th centuries the Anglic tongue steadily extended itself in Scotland at the expense of the Celtic dialects of the south-west and the north, but it does not appear to have become the recognised vernacular of the entire Lowland community till at least the reign of Alexander III. A curious and hitherto unnoticed passage in *Blind Harry* (Bk. vi.), in which Wallace is mockingly saluted in bad Gaelic by an English soldier of the Lanark garrison, might almost warrant the inference that Celtic was still prevalent in Strathclyde in the days of the hero. The great struggle for independence (1297-1314) which created the Scottish nation was carried on by the Scoto-Anglic and Scoto-Norman population, the Celtic clans ranking mainly on the English side; and this fact in all probability finally secured the supremacy of the Teutonic speech. No sooner was the long-deferred unity or nationality of Scotland attained than an Anglic literature sprang into existence, which at one time promised to rival, if not to surpass, that of the south in the splendour and strength of its poetry.

'From the 14th century onward,' says Dr J. A. H. Murray, 'Scotland presents a full series of writers in the Northern dialect, which as spoken and written in this country may be conveniently divided into THREE periods. The first or EARLY period, during which the literary use of this dialect was common to Scotland, with England north of the Humber, extends from the date of the earliest specimens to the middle or last quarter of the 15th century. The second or MIDDLE period, during which the literary use of the northern dialect was confined to Scotland (the midland dialect having supplanted it in England), extends from the close of the 15th century to the time of the Union. The third or MODERN period, during which the northern dialect has ceased to be the language of general literature in Scotland also, though surviving as the speech of the people and the language of popular poetry, extends from the union of the kingdoms to the present day.'

The language of the first of these periods differs in no essential respect from that which was current in England as far south as the Trent. A comparison of the literary remains of both districts proves (1) that they used to a large extent the same words and the same forms of words, e.g., *mirk, byggin, gar, stane, add, cald, wrang, hyng*, etc.; (2) the same grammatical inflections, as seen (a) in irregular plurals, e.g., *childer, kye, schone*; (b) in the use of the indefinite articles as a numeral; (c) in the identity of their demonstratives, and of their verbal forms, e.g., *thow, cumis, clerkes sayis, we that lyves, falland*, in the use of the preposition *tyl* for *to*, etc.; (3) the same orthography, e.g., in the guttural *gh* (changed in later 'Scotch' into *ch*), in the change of the old English *hw* into *qu, gu, gwh*, and *qwh*. The most famous writers in the vernacular literature of this first period were Barbour, Wyntoun, King James I., Henryson, and Blind Harry. Barbour was by far the greatest of metrical chroniclers, a class of poets who sought to win the ear of an audience, by stirring narrative rather than by imaginative sentiment, and who were a genuine product of the Middle Ages. In his noble rhyme, Barbour narrated the heroic struggle of the Bruce with a vivid minuteness of detail that has

engraven itself indelibly on the national memory. Wintoun was a humbler artist, who undertook to recite in verse the History of Scotland, and thought it necessary to start from the creation of Adam. In the *Kingis Quhair* of James the Anglic poetry of Scotland underwent its earliest literary change. The simple unadorned semi-prosaic style of the chronicles gave place to a delicacy and refinement of imaginative feeling, a richness and elegance of diction, and a certain artistic ambition in the choice of verse. The great influence of Chaucer on the Scottish poets of the next period was perhaps due to the prince whose long captivity in England was brightened by the charms of love and the delights of literature. Henryson was the finest poetic genius of the 15th century, and not even Chaucer himself has surpassed the author of the *Testament of Cresseid* in melody of verse or tenderness of sentiment. Blind Harry is the rudest of minstrels, yet his fierce and prejudiced verse shows us, only too well, the pernicious effect of those desperate attempts on the part of the English kings to overthrow the liberties of a proud and obdurate nation. The only relic of prose literature in this period is the *Craft of Deyng*, but for linguistic purposes the old Scottish laws are of great value. Latin authors like Fordun and his continuator do not come within the scope of this article.

The second period of the Anglic literature of Scotland is that in which it becomes distinctively national. The genius of Chaucer had raised the East Midland dialect of English to the rank of a classic or standard for his countrymen. As a consequence of this, the northern dialect gradually ceased to be employed for literary purposes in England, and 'sank into the position of a local and rustic patois,' while in Scotland it grew and flourished as the language of the court, literature, and law. The differences between it and the dialect of the first period are chiefly these: (1) the spelling of many words is changed, chiefly through Gaelic influence—e.g., the diphthongs, *ai*, *ei*, *oi*, begin to be regarded as simple long *a*, *e*, *o*, and to lose their fine diphthongal force, to which is largely due the mean accent of the modern Scotch; (2) the introduction of French words which followed the French alliance—e.g., *gigot*, *aschet*, *tasse*, *fulzie*, *glaur*, *porte*, *gein*, *grosel* (mod. *grozet*), *dour*, *douce*, *caussey*, *dule*, *fascis*; (3) the influence of the revival of learning which for a time flooded the written language with Latin terms—*amene*, *preclair*, *celical*, *humile*, *superne*, *eterne*, *matutine*, *sempitern*, *fructuous*, *melifluate*, *aureate*, *pulchritude*, *celsitude*, etc.—terms that, not finding a reception among the people, soon died out. It is, however, to be noted that in the latter part of this second period the natural growth of the Anglic dialect in Scotland received a check through the influence of the Reformation movement. Mr Murray points out that 'there was no translation of the Scriptures into the northern dialect; for the first forty years of the Reformation movement these and other books used by the adherents of the new faith had to be obtained from England.' As early as the time of Lyndsay we see traces of southern English showing themselves; and it becomes more and more marked in the reign of Mary—Knox himself using, with the greatest licence, the English forms of spelling.

The literature of the second period is in some departments peculiarly rich. Dunbar, Douglas, and Lyndsay, with whom it opens, are names that would lend lustre to any age. When their bright lamps began to shine in the northern sky, England had not even a farthing

rushlight to make its darkness visible. The author of the *Seven Deidly Synnis*, the *Thrissill* and the *Rois*, and the *Goldyn Targe*, well deserved to be called the 'darling of the Scottish muses;' while the diffuse loveliness of Douglas bears witness to the power of the Chaucerian charm. Lyndsay is chiefly memorable for his fierce and life-long battle with the priests, which secured for his satiric verse a popularity that lasted far on into the 18th century. Among the lesser lights of the time were the Earl of Glencairn, Henry Balnave, John Davidson, Sir Richard Maitland, Bannatyne, Alexander Scott, Alexander Hume, and Robert Semple. Prose is powerfully represented by the *Traduction* of Bellenden, the *Complaynt of Scotland*, and the *History of the Reformation in Scotland*, by Knox. The names of Buchanan and Melville can never be forgotten, though their literary genius found expression almost wholly in Latin.

With the accession of James to the English throne, the Anglic dialect of Scotland enters upon its third and final phase. This may be described as a period of gradual but unceasing decay. One genuine characteristic disappeared after another, till by the middle of the 18th century the language had become, from a linguistic point of view, a mere *argon*. The union of the crowns, still more the union of the Parliaments, was fatal to its organic preservation. During the 17th century it maintained, though with ever-diminishing tenacity, its hold upon the law courts, the schools, and the churches, but after the Revolution its fate was sealed. Southern English took possession of the schools, and in spite of the temporary reaction that followed the union of the Parliaments, steadily extended its authority, till it embraced nearly every kind of literature. As a *spoken* tongue 'Scotch' was still in force, but the accessions which it constantly received from its southern sister completely destroyed its dialectic integrity. When we analyse the examples furnished by the literature of the 18th and 19th centuries, we find that they present an incoherent medley of dissimilar forms from which no principle can be extracted. Yet, strange as it may seem, in this forlorn and ruined shape the Anglic dialect of Scotland has been the vehicle of some of the rarest literature the world has seen. Ramsay and Ferguson are not unlikely to fade into something like oblivion, but the verse of Burns is as sure of immortality as anything that has come from the heart of man. He and other gifted spirits, such as the Baroness Nairne, Hogg, Tannahill, Cunningham, Motherwell, with numerous humble but genuine lyrists, have sung so copiously and sweetly of the land which gave them birth; its scenery in all its aspects; its people in all their ways, that Scotsmen may almost be forgiven if a certain pride mingles with their patriotism.

Prose is brilliantly represented by Scott, Galt, and later writers, but in general it forms only a part of their composition. The use of 'Scotch' in fiction or verse may last for some time longer, but the dialect is destined to perish as a living speech, and must therefore, in due time, disappear from literature. It may perhaps share the fate of Latin, and be most carefully studied after it is dead. See David Irving's *History of Scottish Poetry* (1861); Dr James A. H. Murray's Historical Introduction to his Essay on 'The Dialect of the Southern Counties of Scotland,' published in the *Transactions of the Philological Society* (1873); Dr Ross' *Early Scottish History and Literature* (1884); and the publications of the Early Scottish Text Society (1884, etc.)

Gaelic Language and Literature.

By the Rev. ARCHIBALD CLECK, LL.D., Editor and Translator of *Ossian*.

CELTIC was wholly neglected by philologists until a very recent period. A Welshman, Edward Lhuyd (1670-1709), was the first to treat it scientifically. Sir W. Jones (*circa* 1780) started the theory that it was allied to Sanscrit, and to the general family of Indo-European tongues; and Dr Prichard (1831) fully proved the correctness of this theory. But it is from foreign, and especially German scholars, that it has received the critical examination which defines its position on the Aryan tree, and explains its structure on general linguistic laws. Foremost among these ranks J. K. Zeuss, who in 1853 published his *Grammatica Celtica*, a truly noble monument of indomitable perseverance and of profound scholarship. Ebel, Windisch, Rhys, and Whitley Stokes have thrown much additional light on the subject; but for many years to come the *Grammatica Celtica* will form the chief quarry from which the Celtic student must draw his building materials.

For the last forty years the language has received a degree of attention which forms a striking contrast to the contempt with which it had been treated during centuries. It has now its acknowledged place in every able work on philology. A French periodical—*Revue Celtique*—has been since 1871 wholly devoted to its elucidation. It forms the subject of lectures in various German Universities. In Paris, Oxford, and Dublin, Celtic Chairs have been founded; and Scotland has at length rolled away the reproach under which it lay for its strange indifference to a language which had so many peculiar claims on its attention. In 1883 a Chair was founded in the University of Edinburgh for the 'Study of Celtic Comparative Philology,' etc.—a good work due almost wholly to the energy of the late Professor Blackie; and Mr McKinnon, its first occupant, is fitted by high qualifications to make amends for the lateness of his appointment.

The Celtic language is divided into two main branches, now termed Brythonic and Goidelic, but formerly Cymric (or Welsh) and Gaelic; and in this article we retain the old familiar names. The Cymric was a living language in Cornwall until the middle of the 18th century. It is still spoken in Brittany—the Armorican dialect—and also in Wales, where it boasts of a rich literature, both ancient and modern.

But it is of the Gaelic branch we are to treat. It is divided into three sub-classes—the Manx, the Irish, and the Scottish Gaelic. Of the first, little need be said. It is confined to the Isle of Man, has no old records, has adopted the phonetic mode of spelling, uses all the letters of the English alphabet, and is likely to be soon swallowed up by English.

The Irish, on the other hand, possesses a store of ancient literary treasures of which any nation might be proud. During the sixth, seventh, eighth, and part of the ninth centuries, when Europe generally was in such wild turmoil after the breaking up of the great Roman Empire, the remote island of Ireland remained in peace. At that time several truly great men sprang up in it—men of high scholarship, and of fervent, enlightened, Christian zeal, who did great and glorious work in imparting the blessings of the Gospel to the heathen. From Iona in the West they Christianised the North of Scotland and of England. They travelled to the shores of the Baltic, and even to Iceland. They founded monasteries and colleges in various parts of Germany, Switzerland, and Italy; and many proofs of their scholarship and zeal are still to be seen in the

Libraries of Würzburg, Milan, St Gall, Brussels, and other seats of Continental learning. The laws, civil and ecclesiastical, which these men and their contemporaries drew up for their own country—at least as early as the 8th century—are published under the title of the 'Brehon Laws of Ireland,' and show an advanced state of civilisation far beyond that of any neighbouring country. According to the able work of Professor Eugene O'Curry (1861), there are masses of unpublished MSS. in the library of Trinity College, Dublin, as well as in other libraries, British and Continental. They treat of everything which can interest a nation—religion, education, commerce, warfare, music, poetry, etc.; and one thing remarkable is, that, in all the laws, the foremost honour is assigned to learning. The *Ollamh*, or 'Doctor of Laws,' took precedence of the highest nobility.

The Irish had an ancient mode of writing, known as the *Ogham*, similar to the Runic, and consisting entirely of straight lines variously arranged. It appears to have been used in remote Pagan times; and it was continued to some extent in Scotland and Wales, as well as in Ireland, after the introduction of the Roman alphabet, along with Christianity, in the 5th century; but much diversity of opinion, both as to its age and interpretation, still prevails among scholars. The Irish language still retains the antiquated form which belonged to the Roman letters in the 5th century, and thus presents quite a foreign aspect to the English reader. Gaelic, both Irish and Scottish, has limited itself to eighteen letters, rejecting *j, k, q, v, w, x, y,* and *z*. It has suffered much from phonetic decay. Of old it used three genders; but in modern days it has discarded the neuter. It had many terminal inflections; but these have, in several instances, disappeared, though not so completely as in English. They have, however, left traces of their existence unexampled in other languages, and known as *ellipsis* and *aspiration*. These terms mean changes produced by a word on the beginning of that which immediately follows it, so that the language is declined both by initial and terminal inflections. Another peculiarity is, that, according as the last vowel in any syllable of a word is broad or small, the first in the next syllable must conform; thus, in *athair*—'father,' the second *a* is entirely mute, and serves no known purpose. This rule holds good in some Turanian dialects, but is unknown to the Aryan, except in Gaelic; and, while frequently condemned as useless and cumbrous, it is still followed by the writers of the language. The Gaelic is generally denounced by English people as extremely harsh, and even unpronounceable. But it is strange that its aspirations of *ch, gh, etc.*, so strongly objected to, meet with all favour both in Greek and in German, as do its deepest nasal sounds in French. It is to be regretted that it is rapidly casting away its stronger and more consonantal forms, and thus becoming more vocalic day by day.

The Scottish Gaelic is said by many to be so very similar to the Irish, as to be undeserving the name of a separate dialect. But, just as the peoples who respectively speak them, although originally of the same race, have so widely diverged from each other in character, that no one will deny that they now form different families, so it is in regard to their language. There are many differences between the language of the two countries, alike in grammar and vocabulary—not incidental, but systematic; and the Scottish is unquestion-

ably a dialect of the original Gaelic. Its stock of MSS. is inconsiderable, compared with that of the Irish. There are several in the Advocates' Library, Edinburgh, ranging from the 12th to the 16th century, which are interesting, but not very important. The *Book of Deer* (circa 1125), though written in Scotland, is more Irish than Scottish; but the *Book of the Dean of Lismore*, compiled between 1512 and 1530, and published by the Rev. Dr. MacLauchlan in 1862, is undeniably Scottish. It consists almost entirely of historical ballads and songs, taken down by the collector from oral recitation. Nine of these ballads are ascribed to Ossian; and as many as forty-seven other authors are mentioned, some of them being nobles of the land. The spelling is entirely phonetic, and differs in all respects from the spelling of Bishop Carswell, who wrote in 1567. It has not yet been fully explained in any respect, but it is important in proving the wide difference between Irish and Scottish Gaelic—or, it might be said, between the ecclesiastic and vernacular. It also proves that, 350 years ago as now, Ossian was deemed the 'King of Song,' and that poetry was extensively cultivated in the Western Highlands; whilst the fact that several ballads, differing but slightly from those of the Dean, have at the present day been collected from recitation in various parts of the Highlands, shows the remarkable fidelity of tradition among a people destitute of books.

The first book printed in Gaelic was a translation of Knox's *Liturgy* by Bishop Carswell of Argyll in 1567. Strange to say, for eighty years after nothing further was printed, except a translation of Calvin's *Catechism*. About that time translations of the Psalter began to appear, and soon thereafter of other portions of the Scriptures; but till the close of the 18th century there was no complete version of the Gaelic Bible. From that date downwards many works have appeared.

The Ossianic controversy, which raged so fiercely for many years, must be very briefly sketched here. In 1760 James Macpherson published an English translation of what he called the Gaelic poems of 'Ossian.' He was accused of forgery. He promptly advertised that the Gaelic MSS. were to be seen at his publishers, Beckett & De Hondt, London. They lay there for a year, but neither friend nor foe examined them. That he gathered various MSS. in the Highlands is certain. The strong point against him, however, is that these were never published. The Gaelic which was published (1807) was in his own handwriting. Various editions have since appeared, the most complete of which by far is that by the Rev. A. Clerk, LL.D., minister of Kilmallie (Edinb. 1870).

As to the genuineness, it should be known that Mr Skene, the ablest authority on Celtic antiquities in Britain, considers the 'Fragments'—sixteen pieces published in 1797—to be entirely genuine; and further, that several other short portions have, by unexceptionable testimony, been proved to have existed before Macpherson was born. The most rational conclusion seems to be, that the poems of 'Ossian' contain genuine remains of the old heroic ballads of the Gael, linked together and probably modified here and there by Macpherson; and there is no stronger reason to object to their authenticity than to that of Homer, the *Edda*, or the *Nibelungenlied*. Whoever the author was, these poems are Gaelic. They undoubtedly have an air of antiquity about them in many respects, especially in the pure objectivity with which external nature is described. They are remarkable both for sublimity and tenderness, and they have exercised a powerful influence on the tone and style of European literature

down to the present day (*vide* Matthew Arnold's *Celtic Studies*).

One other remark must be made. Immediately after the appearance of 'Ossian,' several other fragments of Gaelic poetry were published, chief among which are the *Sean Dana*, or *Ancient Lays*, by Dr Smith, minister of Campbeltown. These, though destitute of the depth and strength of Ossian, are much more beautiful in various respects; and thus, in whatever manner Macpherson may be disposed of, the fact that the old Gaelic bards composed poetry of the highest order remains untouched.

During the last 260 years a great quantity of lyric poetry has been composed by Highland bards, which, though destitute of the Titanic strength of the Fingalian lays, displays much beauty and varied power. Mary Macleod (1569-1674) shows true Pindaric ardour. John Macdonald (1620-1710), Gaelic laureate to Charles II., is still a great favourite with his countrymen. Alexander Macdonald (1701-80), the 'Tyrtæus of the Highlands,' while too fond of 'the blood and iron' vein, is still a true child of nature, describing her alike in her calmer and fiercer moods with remarkable truth and vividness. Duncan Bàn Mac Intyre (1724-1812) has been called the 'Burns of the Highlands,' and, though ranking far beneath the Ayrshire bard alike in clearness and depth, is truly a sweet singer of all that pertains to pure affection; and is, I believe, unrivalled in his glowing descriptions of the great Highland pastime of 'chasing the deer.' He had a passionate love for mountains and stags. He ranks highest among modern bards, and his works are in ever-increasing demand. One other name deserves to be classed with his—that of William Ross (1762-90), who for genuine feeling and happy choice of terms deserves a high rank in any literature. Dugald Buchanan (1716-68) is by far the ablest of the religious poets; and James Macgregor (1762-1830) holds the second place. Scores of others have been and still are 'warbling their native wood-notes wild.' There are about a hundred thousand lines of modern Gaelic poetry, proving that the people are 'children of music and song.' But with such exuberance of poetic fruitfulness the scarcity of prose composition is in striking contrast. In truth, almost the only name worth mentioning in this department is that of Dr Norman Macleod (1783-1862), minister of St Columba, Glasgow. He may justly be called the father of modern Gaelic culture, and his thorough mastery of the language shows it to possess powers which it does not manifest in any other hands. Professor Blackie ranks one composition of his, for 'graceful simplicity and profound pathos,' among the foremost known in any language. His collected works, *Caraid nan Gàidheal* ('The Highlander's Friend'), have been edited by the Rev. Dr Clerk (Glasgow, 1865). An interesting collection of Gaelic proverbs has been published by Sheriff Nicolson; and Mr J. F. Campbell of Islay, in his great work, *West Highland Tales*; and in his *Leabhar na Féinne* ('Book of the Fingalians'), has done more for Gaelic literature, in the department of ancient tales and lays, than any man living. There is a grammar by Dr Stewart, and another by Mr Munro. There are dictionaries—one by Armstrong (1825), one by the Highland Society (1828), and one by Drs Macleod and Dewar (1845)—but the best of them all is very defective; and the Professor of Celtic has needful, though weary, work before him in enlarging and correcting both grammars and dictionaries.

The Gaelic language is rich in words expressive of all the emotions of the heart, and is thus a language of love and devotion. It is rich, too, in terms descriptive of nature's external aspect, discriminating between

every shade and colour, and between forms which to an ordinary eye present the appearance of sameness. Thus it is well fitted for descriptive poetry, and the significant names which it has left in many lands, where it was spoken of old, fully attest its topographical power; but it is almost wholly without terms of science, mental or physical; nor is it in the least of a plastic nature, to adapt itself to the onward progress and rapid changes of the modern world. Again, throughout the poetry, not only of Ireland and Scotland, but also of Wales, there runs a tone of deep sorrow, of 'piercing sadness.'

These remarks on the language are a key to the character of the people who formed it, and who in small numbers speak it still. Of these there are 950,000 in Ireland, upwards of 300,000 in Scotland, and several thousands in North America. Generally they know little of the history of their far-off ancestors

who, before Christ was born, ruled over all South-Western Europe, and had settlements also in Asia. But the shadow of a great and constant decline seems to darken their spirits, so that they are ever wailing over departed glory, instead of conquering the realities of the present or shaping out a prosperous future. Full of sensibility, tender in feeling, ardent in passion, and fearless in spirit—witness the records of the British army—they yet lack the steadfast, patient, unyielding powers which alone secure abiding success. Thus, they have been for ages driven into ever-narrowing limits by Roman and Saxon; and fierce as are the spasmodic efforts occasionally made by them to reassert something of their ancient sway, the time, according to all appearance, must soon arrive when throughout Ireland and Scotland they will be as wholly absorbed as they have been, long ago, in England and France.



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